Microsoft's upcoming Indigo technology for developing Web services leaves some users scratching their heads. PAGE 6

Mixing voice and data networking staffs is a big hurdle for VoIP users such as Bank of America's Craig Hinkley. PAGE 12

COMPUTERWORLD

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FEBRUARY 14, 2005 ▪ VOL. 39 ▪ NO. 7 ▪ $5/COPY

William Lobeck, Tyler Best and Eugene Pizinger (from left) led the consolidation of National and Alamo IT systems.

JOSEPH MILLS

MECHANICS OF A MERGER

Take two failing rental-car brands with mismatched IT systems and combine them into a single operation: That was the daunting challenge for Vanguard Car Rental and its outsourcing vendor. BY PATRICK THIBODEAU PAGE 35

NEWSPAPER

Users Face Prospect of Further Changes at HP

Vendor says Fiorina's firing won't alter strategy, but board sets no firm conditions for next CEO

BY PATRICK THIBODEAU

Many of Hewlett-Packard Co.'s users, especially those running its older systems, were rocked by changes during the six-year tenure of former CEO Carly Fiorina, who was ousted by HP's board last week. And now there's the potential for more upheaval as the company hunts for Fiorina's replacement.

CARLY FIORINA

"What's going to happen now is really up in the air," said Denys Beauchemin, a member of the board of Interex, an HP user group.

But Beauchemin added that he doesn't see how HP can make major changes to its end-of-life plans for technologies such as its PA-RISC processors, which the company is dropping in favor of Intel Corp.'s Itanium chips.

"They're really not in the chip building and designing business anymore," said Beauchemin, a systems migration consultant at Austin-based IT services firm Sector7 USA Inc. "They put all their eggs in the Itanium basket."

Sanjiv Anand, CIO of the government of Santa Clara County, Calif., sees the prospect of new leadership as a good thing for the company. Anand said HP is a major supplier of the county's 12,000 desktop PCs and 1,000 laptops, but he added that the IT department has had some problems with HP equipment.

"We ordered things, turned on the switch, and they wouldn't work," Anand said. Referring to whoever becomes the next CEO, he added, "I think they need somebody to

HP Changes, page 16

Microsoft Tries New Pitch to Curb Linux Use

Users split on value of indemnification vows

BY CAROL SLIWA

Just days before today's opening of the LinuxWorld Conference & Expo, Microsoft Corp. made another attempt to sway users away from the open-source operating system by spotlighting the need for strong intellectual-property protection — an area where it claims to have an advantage.

Yet even though half of 28 users polled by *Computerworld* last week via e-mail and telephone indicated that IP protection is important to them, the results also showed that it hasn't been a make-or-break issue for the majority of companies that are using or experimenting with Linux servers. And the heaviest Linux users said they're doing a careful analysis to ensure that they mitigate any risks.

"I won't say we don't see a risk here. We do. But we

Linux, page 49

MORE INSIDE

First National Bank of Omaha is replacing its Sun and Wintel servers with an IBM mainframe and blade servers running Linux. PAGE 7

IT Execs Seek Weapons to Fight Spyware

Several vendors to unveil tools at RSA

ONLINE

Read more IT security news on our Web site: QuickLink k1600

BY JAIKUMAR VIJAYAN

Tools designed to fight off a spyware "epidemic" are expected to get close scrutiny from corporate users at this week's RSA Conference in San Francisco.

Spyware, which was a low-priority item on many IT security agendas a year ago, has quickly evolved from an annoyance to a substantial security and support burden, users and analysts said.

"Spyware has truly become an epidemic," said Lloyd Hes-

Spyware, page 49

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Robert Fort
Director of IT, *Virgin Entertainment Group, North America*

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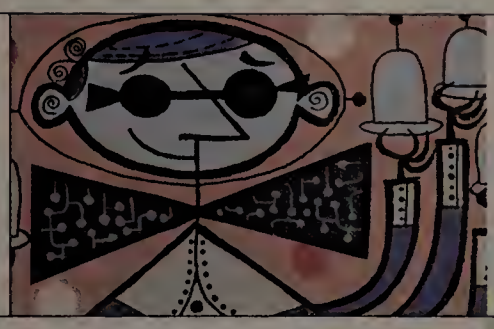

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7 EMC's addition of iSCSI support to its midrange arrays may help give the technology a foothold in data centers.

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ONLINE

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QuickPoll Results

How will Carly Fiorina's departure from HP affect the company?

Poll will remain open through Feb. 16.
Vote at www.computerworld.com.

SOURCE: *COMPUTERWORLD.COM* NONSCIENTIFIC SURVEY, 106 VOTES

The Curse of the Secret Question

SECURITY: Secret questions are supposed to help protect your online accounts. But do they? **QuickLink 52479**

From A to RFID: Plumbing 101

MOBILE/WIRELESS: IBM's Mark Ouellette offers four hard questions you need to answer to see if your company is ready for RFID. **QuickLink 52493**

Hands On: Apple's Latest PowerBook

MACINTOSH: It may not have a G5 chip in it, but *Computerworld.com*'s Ken Mingis finds that the newest 17-in. PowerBook offers solid value — if you haven't upgraded in a while or need the latest features. **QuickLink 52533**

What's a QuickLink?

Throughout each issue of *Computerworld*, you'll see five-digit QuickLink codes pointing to related content on our Web site. Also, at the end of each story, a QuickLink to that story online facilitates sharing it with colleagues. Just enter any of those codes into the QuickLink box, which is at the top of every page on our site.

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Newsletter Subscriptions
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The Online Store
QuickLink a2420

AT DEADLINE

Microsoft Delays CRM Ship Again

Microsoft Corp. once again delayed ship dates for its CRM 2.0 update, this time until the end of this year. The company disclosed the delay along with an announcement that it is expanding the software's feature set. The move came a week after Microsoft named an ex-PeopleSoft executive to head its CRM operation. The application was first scheduled to ship in 2004 and was delayed to mid-2005.

IBM Adds 64-Bit Xeon Servers

IBM today will unveil four eServer XSeries servers and one BladeServer based on Intel Corp.'s new 64-bit Xeon processors. IBM said the new systems will take advantage of two key 64-bit Xeon functions, Demand Based Switching and Execute Disable Bit. DBS should lead to decreased power consumption, IBM claimed. The systems will ship next month.

Dell Profits Lower On Tax Charge

Dell Inc. posted solid growth across its hardware businesses in its fiscal 2005 fourth quarter, but a one-time tax-related charge caused a decrease in net income.

DELL BY THE NUMBERS

	REVENUE	PROFIT
Q4 '05	$13.5B	$667M
Q4 '04	$11.5B	$846M

Siemens to Increase R&D Staff in India

Siemens AG plans to hire 1,000 software engineers in India this year as part of an effort to expand its research and development activities in growth markets. The new hires will bring the number of software engineers Siemens employs in India to 4,000. Over the next three years, the company plans to invest $500 million in its Indian operations, which currently employ about 10,000 people.

Users Seek Answers on Indigo

Microsoft moves to reassure developers at VSLive event

BY HEATHER HAVENSTEIN
SAN FRANCISCO

MICROSOFT CORP. last week vowed to dramatically boost developer productivity with its forthcoming Indigo communications technology for building Web services. Some users, however, say they're still grappling to understand the tools in Indigo's .Net Framework predecessor.

At Microsoft's VSLive conference in San Francisco, executives of the software vendor provided new details about Indigo, which Microsoft describes as a set of .Net technologies that can be used to build and run connected systems. Officials said the Indigo unified programming model is an extension of .Net Framework 2.0 that can be used to build advanced Web services.

Microsoft initially planned to ship Indigo only as part of the next-generation Longhorn operating system, but last summer it decided to make the technology available for Windows XP and Server users [QuickLink 49129].

A prebeta community technology preview of Indigo will be released in March.

Because it's based on standards like WS-Security and WS-Reliable Messaging, which were developed by Microsoft and its partners, the Indigo subsystem will allow developers to create advanced Web services by writing much less code than is required today, Microsoft executives said.

In addition, the adherence to emerging standards will allow Web services created in .Net to more easily interoperate with those created by technologies from other vendors, like IBM and BEA Systems Inc., that are also involved in creating the standards, according to Microsoft.

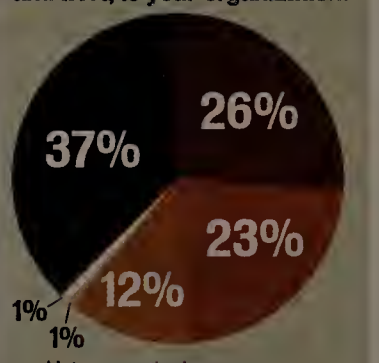
"In the past, security and reliability were an afterthought," said Ari Bixhorn, lead product manager for Microsoft's platform strategy group. "With Indigo, we built all that in from Day 1. Developers should be able to focus on the business problem in their code."

But some developers are still focusing on mastering initial attempts at using Web services to tie together applications without hard-coded integration, and they question whether Indigo can help speed that task along.

Indigo "looks nice on paper, but I will have to see it in action," said Richard Hawk, a developer at West Bend Mutual Insurance Co. in West Bend, Wis., who has been using Visual Studio .Net 2003. "We're trying to develop Web services on an IBM mainframe, and it has been very painful trying to tie together all that information."

.NET VS. JAVA

When considering only Java and .Net, is your organization:



Base: E-mail survey of 966 *Computerworld* subscribers

ServiceMaster Clean in Memphis has been using Visual Studio .Net 2003 since late last year to build a handful of Web services for internal integration. But Allen Nelson, ServiceMaster's director of information systems, said Microsoft's description of Indigo's place within .Net still lacks clarity. "I don't know how it fits in [or] if it will even change our code," he said.

Fei Ho, vice president of software at ABN Amro Holding NV, a financial services firm with U.S. headquarters in Chicago, said his organization, which recently started using .Net, will wait until Web services standards stabilize before upgrading to Indigo.

"Web services haven't been stabilized yet, and we would like to wait a little bit if we have to change what we have now," Ho said.

Microsoft needs to better clarify Indigo's role in building Web services, added Shawn Willett, an analyst at Current Analysis Inc. in Sterling, Va. "I agree with users [who say] that Indigo is confusing. Is it a product [or] a set of products?" he said.

The main advantage to Indigo, he said, likely will be its standards-based approach to performing basic functions like security through Web services and adding processes on top of Web services.

A beta release of Indigo is slated to ship in June, with general availability in 2006.
52542

MORE ONLINE

Q&A: Microsoft development head Soma Somasegar talks about Visual Studio 2005:
QuickLink 52543
www.computerworld.com

VS 2005 Eases Web Development

SAN FRANCISCO

MICROSOFT users last week applauded Visual Studio 2005's focus on tools that can more easily build Internet applications and support development teams.

At the VSLive developer conference here, Microsoft executives said the Visual Studio 2005 family of development products, due to ship by mid-2005, will feature a smart-client platform. The platform can be used to build Web applications that provide the rich user experience of thick-client applications and can be deployed and maintained with the ease of HTML-based thin-client applications.

In addition, the smart clients can be designed to easily access data from mobile data sources.

John Henkel, senior developer and architect at Denver Water, said he's interested in using the smart-client technology to support a mobile application he's developing. With it, the Colorado utility's field users will be able to locate and map water meters using Global Positioning System data.

Developers also heard details on Visual Studio 2005 Team System, which executives said will provide an integrated workflow mechanism so developers, architects and testers can collaborate.

Paul Lethers, a software developer at San Jose-based Olympus Integrated Technologies America Inc., a maker of semiconductor inspection products, said his company has struggled to foster collaboration between development teams in the U.S. and Japan. The teams currently can't access the same source-code database, and Olympus-ITA has been forced to use contractors at both sites to fix bugs, he said.

"If we could leverage the work Japan is doing, we wouldn't need the contractors. They are fixing the same bugs we are," he said.

At West Bend Mutual Insurance Co., the company's 75 developers are using a combination of disparate tools, according to Richard Hawk, a developer at West Bend.

"We need something to integrate it all together," said Hawk.

– Heather Havenstein

Omaha Bank Picks IBM to Replace Sun, Wintel

Savings estimated at $11.4M through 2011

BY LUCAS MEARIAN

First National Bank of Omaha is nearing completion of a project to replace a Sun and Wintel distributed server infrastructure with an IBM-based mainframe and blade-server architecture based on Linux.

Though the project is only 80% complete, the move is expected to save the company $1.8 million this year in operating expenses and another $9.6 million through 2011, bank officials said last week.

The bank expects to complete the project by April. Much of the savings will result from reducing the number of engineers needed to run its systems from 24 to eight.

Kenneth Kucera, division head of the Omaha-based bank's enterprise technology services, said he had been weighed down by the cost of managing nearly 600 servers, including 30 Sun Solaris boxes and 560 Intel-based systems from Hewlett-Packard Co. and Dell Inc. In order to manage that growing infrastructure and keep up with necessary administrative tasks, the bank was forced to add network and server staff at the rate of 30% per year.

For the new infrastructure, First National Bank chose an IBM zSeries mainframe for its processing hub, along with 70 IBM BladeCenter servers. For storage, the bank selected IBM's high-end Enterprise Storage Server and Hitachi Data Systems Corp.'s midrange Thunder storage array.

A Growing Trend

Stacey Quandt, an analyst at Robert Frances Group Inc. in Westport, Conn., said changing from distributed server infrastructures to mainframes and blades is a growing trend as companies look to reduce complexity and save data center space.

"In many banks, the situation tends to be Sun UltraSparc systems they're looking at changing out," Quandt said. "Given the benefits and reliability of mainframes, and then to leverage blades and Linux, that combo has been very compelling to financial services companies."

Kucera said he would have considered Sun products had they been available. But when he began hunting for a way to consolidate his infrastructure in 2003, Sun had nothing to offer in the way of blade servers or Linux. "They were late to the game," he said.

Sun officials didn't respond to requests for comment.

Quandt said Sun has been selling Linux on blades for some time but is still working on launching a mainframe equivalent — its next-generation UltraSparc server, which will sport Sun's upcoming Niagara multicore chip. That system is due out in 2006, Quandt said.

Kucera said the IBM eServer zSeries 990 will be used to monitor and maintain key banking operations that were previously supported by Sun Solaris servers. The 70 IBM eServer BladeCenter servers will support Web-based banking and office applications that had run on the 560 Windows-based servers.

"Linux gives me the option to scale up, down or across platforms — mainframe, midrange, PC desktop," Kucera said. "And it's more cost-effective."

For example, it's impossible today to run Microsoft Windows on a mainframe, he said. But Kucera can run 60 virtual Web servers on the IBM mainframe using SUSE Linux.

"As a result of consolidation, we only have to maintain a handful of servers instead of nearly 600, making the task much less complex and expensive," he said. Fewer servers also means fewer network connections to maintain, which helps bolster network security at a lower cost.

A bank holding company with more than $16 billion in managed assets, First National Bank is also running IBM's WebSphere application server, portal and business integrator; IBM's DB2 Universal Database, Lotus Instant Messaging software and Tivoli and Rational applications; and IBM ThinkVantage desktops and laptops.

IBM is also providing Kucera with its capacity-on-demand features for computing resources when the bank needs additional capacity. That arrangement allows the bank to rent computing resources whenever they are needed simply by expanding the number of processors available in currently installed zSeries servers for as little as a day at a time. **52556**

REPLACEMENT DETAILS

First National Bank of Omaha

GOING OUT:
- 560 Wintel servers
- 30 Sun UltraSparc multiprocessor servers
- Sun Solaris operating system

COMING IN:
- One eServer zSeries 990
- 70 IBM eServer BladeCenter servers
- IBM TotalStorage SAN Volume Controller virtualization software
- WebSphere applications running on virtual Linux servers

iSCSI Gains Foothold in Data Center

Users cite cost, ease-of-use benefits

BY LUCAS MEARIAN

EMC Corp. today will unveil new Internet SCSI versions of its midrange and low-end arrays, the latest in a series of industry moves that experts say will significantly boost corporate adoption of the LAN-based technology.

Storage-area networks (SAN) built on Ethernet are gaining popularity because they offer significant cost savings and reduced network complexity compared with the more widely installed Fibre Channel technologies. At the same time, the number of top-tier vendors offering iSCSI products continues to grow, analysts said.

EMC will be unveiling iSCSI-enabled versions of its low-end Clariion AX100 and midrange Clariion CX300 and CX500 arrays. The systems are priced from $6,000 and offer 3TB to 35TB capacity.

EMC's high-end Symmetrix DMX and network-attached storage (NAS) products were iSCSI-enabled in 2003.

Several users of iSCSI arrays from other vendors said the technology is meeting their cost and performance expectations.

Scott Blackstone, senior network administrator at Wurld Media Inc. in Saratoga Springs, N.Y., rolled out a 40TB, $500,000 iSCSI SAN from EqualLogic Inc. in Nashua, N.H., last fall.

Blackstone said he chose iSCSI over Fibre Channel because deployment was much faster and "much more comfortable. We already have a staff of people that are very good network engineers and have that [LAN] skill set already in place."

EMC's CX300 midrange array

Wurld Media's iSCSI SAN supports 25 Hewlett-Packard Co. servers and acts as a storage repository for serving up MP3 audio files, movies and television shows to companies such as Sony BMG Music Entertainment, Universal Music Group and Warner Music Group. The SAN is also used to store transactional data from sales operations.

"I don't think we really had any serious challenges in setting it up," Blackstone said.

There are already a half-dozen small iSCSI start-up vendors, and large storage vendors are increasingly taking the plunge.

Last September, for example, IBM released the TotalStorage DS300, an entry-level disk server with iSCSI connectivity. In 2003, Network Appliance Inc. was the first major vendor to bring out a range of iSCSI products based on its NAS line.

Chris Hughes, director of IT at regional airline Independence Air Inc. in Dulles, Va., installed a small 1.5TB iSCSI SAN based on NetApp's FAS960 NAS array last March. The rollout took a week and a half, and so far the system has worked flawlessly, he said.

Hughes contended that any additional speed gained from a Fibre Channel network using 2Gbit/sec. technology instead of Gigabit Ethernet would be pointless if the end user couldn't see it.

Jared Gregersen, a network administrator for the Choctaw Nation of Oklahoma, recently purchased two 8TB iSCSI SANs from LeftHand Networks Inc. in Boulder, Colo., to support casinos and a 500-person municipal government. Gregersen already uses a midrange Fibre Channel SAN based on a 3TB EMC Clariion CX600 array.

"It's just easy for new computer technicians to learn," he said. "It's just more of a hassle to change [configurations] on the EMC array than on the new IP SAN." **52564**

BRIEFS

Cisco Profits Double In Second Quarter

For the first time in several quarters, Cisco Systems Inc. saw strong momentum in its enterprise and commercial business worldwide as revenue rose 12.3%. Profits almost doubled in the vendor's second quarter.

CISCO BY THE NUMBERS

	REVENUE	PROFIT
Q2 '05	$6.1B	$1.4B
Q2 '04	$5.4B	$724M

IBM Adds Low-End pSeries Server

IBM has rolled out its first pSeries server for under $4,000. The company hopes it will attract first-time users looking to blend existing Unix- and Linux-based environments. The eServer p5 510, fueled by IBM's Power5 processor, can be configured as either a one- or two-way rack-mounted system. The server ships next week.

Merrill to Deploy Avaya Systems

Merrill Lynch & Co. has signed agreements with Cisco and Avaya Inc. to deploy telephony systems at a variety of sites. Merrill Lynch will deploy Cisco voice-over-IP systems for the company's 14,000 financial advisers in 600 offices nationwide. At the same time, Merrill Lynch will deploy the Avaya Communications Manager S8700 Media Server to 10,000-plus employees in the U.S., Australia and Brazil.

Ask Jeeves Buys Trustic's Bloglines

Seeking to complement its flagship search engine, Ask Jeeves Inc. acquired Trustic Inc., which owns and operates the Bloglines online content-aggregation service. Bloglines will operate independently within Ask Jeeves and retain its Web site, but the companies' services and technologies will be integrated.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY GOSSIP BY MARK HALL

MATTHEW FAULKNER

Prevent App Hacks With Automated . . .

. . . "pen test" tool that reveals coding flaws. Cenzic Inc. in Santa Clara, Calif., this week unveils its application-penetration-testing product, Hailstorm 2.0, which automates assessments of your software's security. Given that IBM charges between $25,000 and $100,000 to manually assess the security of a single online application, Hailstorm's $5,000-per-app price tag may be IT's bargain of 2005. "Hailstorm emulates a hacker," says John Weinschenk, Cenzic's CEO. The software identifies all the pages and forms in an online program, then mounts a flurry of attacks designed to break through the often flimsy security of a user interface to get to the underlying data sources. Weinschenk observes that many online apps' user interfaces are designed primarily to "look real nice" but not necessarily to be real secure. In addition to discovering weaknesses, Hailstorm shows you how to fix them and even suggests reference sources so programmers can learn not to repeat those mistakes.

WEINSCHENK: Automate "pen tests."

Endpoint security choices to broaden . . .

. . . in coming weeks as vendors scurry to plug IT safety gaps. Later this month, for example, Draper, Utah-based Senforce Technologies Inc. will ship its Endpoint Security Suite (ESS). Among other things, it protects users in wireless hot spots, encrypts files, disables devices that don't receive the proper ESS acknowledgment after being attached to the Internet and ensures that any device connected to a corporate network has the most recent versions of antivirus tools and software patches. Pricing is set to be less than $70 per user.

Next month, InfoExpress Inc. in Mountain View, Calif., is expected to receive certification from Cisco Systems Inc. for its CyberGatekeeper appliance. The $10,000 device will work with Cisco's Network Admission Control technology, which is designed to help companies enforce security policies on PCs and mobile devices. CyberGatekeeper adds certified enforcement capabilities for policies on operating systems, applications and other code that resides on connected devices.

CyberGatekeeper integrates with Cisco's NAC.

Organize corporate reports into . . .

. . . single dashboard view. Business intelligence may get a tad smarter this week when Indianapolis-based Theoris Inc. ships the 3.2 upgrade of its Theoris Vision Software. Theoris says the new release adds "adaptive HTML," a proprietary feature that takes existing reports from, say, Cognos or Crystal Reports and turns the static output into HTML. The software then displays the results in an end user's dashboard. The adaptive HTML feature also maintains a link to reports so that any changes are immediately reflected in dashboards. According to Michael Brooks, vice president of strategic alliances at Theoris, the company's software can combine the output from disparate reports into a single visual metric. He also claims that the technology is so simple to use that a metric-laden dashboard can be created in a single day. Pricing starts at $25,000.

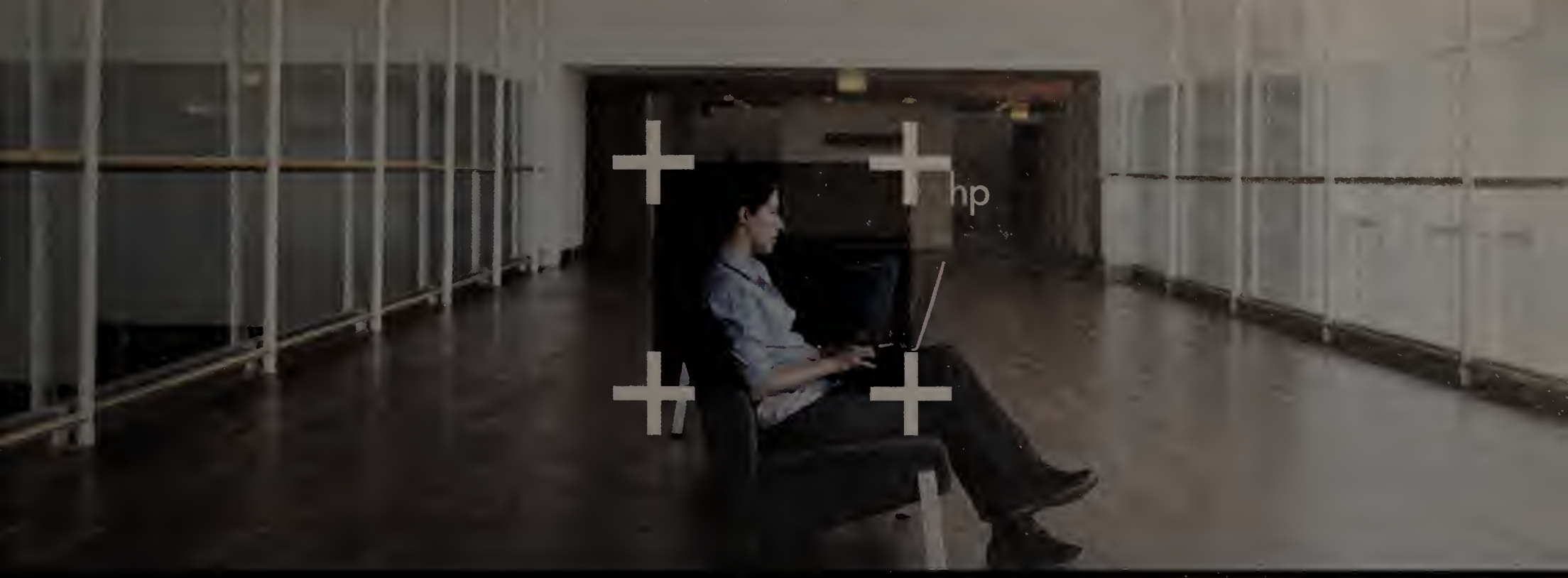
Forget e-mail. Soon, we will all . . .

. . . be blogging instead. That just might be our future, says Robin Hopper, CEO of Surf-Map Inc., a Burlington, Ontario-based company that does business under the name iUpload. "E-mail is weakening daily as a channel to communicate," Hopper argues. Blogging isn't burdened with viruses and spam, he says, adding that you can combine it with Real Simple Syndication (RSS) feeds and Web content management to produce a more effective communication tool than e-mail is.

HOPPER: Don't e-mail. Blog instead.

His company's Personal Publisher hosted service this week will begin offering a feature called Perspective that will let you use RSS to automatically invite people in your Salesforce.com and Plaxo address books to go to your blog. In Q2, iUpload will add to Perspective support for CRM packages from FrontRange Solutions Inc. and Microsoft Corp., Hopper says. Pricing for iUpload's service begins at about $1,000 per month.

Five Across Inc. in Palo Alto, Calif., has taken a different approach to the blogging phenomenon. David Aune, vice president of marketing at Five Across, says his company combines instant messaging, Web serving and blogging with simple drag-and-drop tools to create content for workgroups. The Five Across blog, called Bubbler (love that name), lets teams create pages with predefined or customized templates and share the content with authorized members. Trusted users can add text, photos or files by simply dragging them to a Bubbler page. In beta now, Bubbler is due to ship this spring as a hosted service starting at $5 per month per user, or you can license the software for $499. **52518**



More wireless PCs. More security.

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Microsoft's Latest Patch Release Takes Shine Off Antivirus Deal

Flaw problems overshadow latest security purchase

BY JAIKUMAR VIJAYAN

MICROSOFT CORP. last week announced plans to acquire antivirus tools vendor Sybari Software Inc. But the eight software patches that Microsoft released on the same day to fix critical flaws in its products added to the skepticism that some users feel about the company's expanding IT security ambitions.

"Microsoft has a long way to go when it comes to information integrity," said Dave Jordan, chief information security officer for the government of Arlington County, Va. "All you have to do is take a look at the latest Terrible Tuesday."

Jordan was referring to the set of patches issued by Microsoft last week in the latest of its regularly scheduled security updates, which take place on the second Tuesday of each month. Altogether, the software vendor released 12 new patches.

Eric Beasley, a senior network manager at Baker Hill Corp. in Carmel, Ind., said the application service provider already gets "a lot of flak" from its customers for being an all-Microsoft server shop.

"I don't know that I would feel comfortable about having Microsoft as my antivirus vendor as well," Beasley said, pointing to the company's continuing difficulties in making its products more secure. "They may be issuing patches only once a month — still, eight [critical ones] at once is a lot."

One good thing about Microsoft's expanding presence in the security business is that it likely will spur more innovation from pure-play vendors, said Steve Gelfound, IT operations manager at the National Center for Missing & Exploited Children in Alexandria, Va. "The others are going to have to work harder to compete," he said.

MORE ONLINE

The latest group of security fixes was one of the largest issued by Microsoft since it adopted its monthly patching cycle:

QuickLink a5450
www.computerworld.com

The Sybari acquisition will be Microsoft's third security-related purchase in less than two years. Microsoft bought GeCAD Software, a Romanian antivirus vendor, in June 2003. And just last month, it completed an acquisition of Giant Company Software Inc., a New York-based vendor of antispyware tools.

Microsoft's acquisition of East Northport, N.Y.-based Sybari for an undisclosed sum will give it a server-level security suite designed to protect Exchange and Lotus Notes messaging servers as well as its SharePoint Portal Server collaboration software.

Sybari's technology will allow Microsoft to address a continuing need among users for tools that offer better protection against e-mail security threats than they currently receive, said Gordon Mangione, corporate vice president of Microsoft's security business and technology unit. "We're still seeing large network penetrations by viruses coming in through e-mail flows," he said.

IT managers should expect Microsoft to be "very aggressive" about pushing Sybari's software for use with Exchange, said Jon Oltsik, an analyst at Enterprise Strategy Group Inc. in Milford, Mass.

But, Oltsik noted, other antivirus vendors "are probably going to push back with an anti-Microsoft message that says, 'Do you really want the fox to guard the chicken coop?' "

That message may resonate with users like Arlington County's Jordan. "It's just not clear to me what space it is they think they're going to impact with this," Jordan said of Microsoft's deal to buy Sybari. He added that most companies standardized long ago on third-party security tools and that there is little evidence Microsoft can offer a better alternative. **52565**

What Sybari Brings to Microsoft:

- **Antivirus software** designed specifically to protect Exchange, SharePoint and Lotus Notes servers.
- **Support for virus scanning engines** from vendors such as Norman Data Defense System Ltd., Sophos PLC, Computer Associates International Inc. and Kaspersky Labs.
- **More than 9,000 customers,** including 20% of the Fortune 500 companies, according to Sybari.

Arkansas Vote Calls for End to Budgeting Scheme

Performance-based model doesn't meet business goals, says state legislature

BY MARC L. SONGINI

The Arkansas State Senate last week voted to repeal a law mandating that agencies use performance-based budgeting methods enabled by the state's ERP system. But some officials said the problems with the approach aren't related to the budgeting software that agencies now use.

Performance-based budgeting is a private-sector concept that Arkansas officials hoped would provide state agencies with greater budget flexibility. The new budgeting methodology was meant to be part of the $60 million Arkansas Administrative Statewide Information System (AASIS), an ERP backbone based on SAP AG's R/3 application that went live in July 2001.

The Senate bill, which lets agencies use the more traditional line-item method of budgeting, offered a number of reasons why the performance-based approach hasn't succeeded.

'Burdensome' Process

The bill criticizes an SAP budgeting application that the state first used, but it adds that the model "does not accurately reflect state agency goals and objectives" and is "burdensome to state agencies."

The sponsor of the measure, Sen. Percy Malone, explained in an e-mail that the state is "several years down this road" of using dual budgeting systems, which is "no way to run state government."

"The proposed Senate bill is faulty because it contains language that is inappropriate and inaccurate," said a SAP spokesman. Arkansas "is ending its performance-based budgeting program because it has decided that the budgeting technique is not appropriate for their operations. SAP delivered the budgeting software, and the state decided not to use the solution. The matter is being litigated in the courts."

> **"The performance-based budgeting process is burdensome to state agencies."**
>
> ARKANSAS STATE SENATE BILL 204

After the state abandoned the SAP performance-based budgeting application, it spent $2 million to have Protech Solutions Inc. build custom budgeting software. Little Rock-based Protech delivered its application last June after a six-month development project.

Keith Leathers, AASIS director for the state, said that the software written by Protech has performed well and that the state's move to stop the use of performance-based processes has nothing to do with the quality of the budgeting application. Leathers said the government will continue using Protech's software, which can accommodate both types of budgeting.

He added that the functionality supporting the presentation of budgets in a performance-based format will remain in place in case the state makes future changes in the way that budgeting is done.

Nagaraj Garimalla, Protech's president, said the budgeting system developed by his company "satisfies all the requirements" set by the state. The software is customized around Microsoft Corp.'s .Net technology and provides browser-based views of budget data. It uses Microsoft's SQL Server database and includes Business Objects SA's Crystal Reports software, Garimalla said. **52561**

Correction

Last week's front-page story about the move away from performance-based budgeting in Arkansas contained inaccurate information. A revised version of the story can be found on our Web site: **QuickLink 52392**

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BRIEFS

Swainson Officially Made CEO at CA

Computer Associates International Inc. has officially named John Swainson CEO. Swainson was hired by CA in November from IBM as president and CEO-elect. As CEO, he succeeds Kenneth Cron, who had served as interim CEO since April 2004. Swainson has already made changes at CA after an accounting scandal that led to the ouster of top executives and a criminal probe.

Symantec Releases Major Security Fix

Symantec Corp. has issued patches to fix a "high impact" security hole that affects almost all of its products. The vulnerable module fails to properly check within files for viruses and could allow an attacker to cause a "heap overflow" using a specially crafted UPX file. Symantec said it had started removing the DEC2EXE module from its software before the flaw came to light.

NYC Signs Pacts With Unisys, IBM

New York has signed deals with Unisys Corp. and IBM to run parts of its transit operations. Unisys will manage 12,000 PCs and 350 severs under a $105 million deal with NYC Transit. IBM will manage multiple processing operations under a $65 million contract with with New York's Metropolitan Transportation Authority.

Novell Issues Road Map for GroupWise

Novell Inc. has unveiled long-term plans for its GroupWise collaboration product that include three releases over the next four years. Novell said the road map underscores the status of GroupWise as a key piece of its strategy. The next release, code-named Sequoia, will ship by midyear, followed by "Aspen" and "Cedar," in 2006 and 2008, respectively.

Voice, Data Teams At Odds Over VoIP

IT managers struggle to bring together disparate networking staffs for projects

BY MATT HAMBLEN
LAKE BUENA VISTA, FLA.

THE THORNIEST question facing voice-over-IP project managers remains whether they can get their voice and data networking staffs to work effectively together on rollouts, attendees said at last week's VoiceCon 2005 conference here.

As VoIP technology gains in popularity, more companies are seeing the need to bring their telecommunications managers into planning and implementation discussions with their data networking engineers. But the two cultures are often still at odds, experienced users said.

Allan Rubin, manager of network engineering at Delta Air Lines Inc. in Atlanta, said a recently completed VoIP implementation serving 8,000 call center agents in 17 locations worldwide taught him that voice and data engineers must at least report to a common manager.

"If the voice and data groups don't report into the same place, you face a lot of high hurdles," Rubin said. "You have to take the traditional voice and data people and lock them in a room someplace."

Beyond the Trial Stage

Similar concerns about the difficulty of mixing voice and data staffs were raised at last year's VoiceCon [QuickLink 45247]. Users and analysts said last week that the continued focus on the politics of putting together VoIP teams shows that the technology has moved well beyond the trial stage.

PPL Services Corp. formed a team of voice and data engineers by placing the workers in the same office area with their cubicles interspersed, said David Stever, manager of communication technology services at the Allentown, Pa.-based power company.

Later, the entire VoIP group was relocated to a new office, Stever said.

VoIP managers also suggested setting up clearly defined roles for both sets of workers and even cross-training them.

Bank of America Corp. in Charlotte, N.C., plans to provide VoIP service to 180,000 end users over the next three years. Craig Hinkley, the bank's senior vice president of network architecture, said project managers have tried to ease the divisions between voice and data workers by creating VoIP infrastructure and application services teams that may include both types of skills.

HINKLEY says Bank of America has created infrastructure and application services teams to ease the divisions between voice and data.

At PPL, job duties have evolved into three mixed groups, with one for infrastructure, another for higher-level networking functions such as e-mail and voice mail, and a third devoted to network operations, according to Stever.

Expanding Roles

Several VoIP managers said they have found that training data networking employees to deal with end users is especially important because many of them haven't had the same level of contact with users that voice personnel have had.

Discussions at VoiceCon also covered topics such as whether job descriptions should be written so that duties are parallel and whether salaries must be at parity, since voice engineers have traditionally earned less than their data counterparts.

Janet Smith, a consultant at Janet Smith & Associates in Chapel Hill, N.C., said she combined the voice and data teams at an academic medical center where she worked in a prior job.

The convergence eventually "worked like a charm," but the process wasn't without headaches, Smith said during a "birds-of-a-feather" discussion at VoiceCon.

For example, the data networking staffers "never wanted to play by the rules," Smith said. "Some days, if I'd had a gun, I would have shot them all," she added with a laugh.

52562

MORE NEWS ONLINE

Research In Motion announced a BlackBerry that connects to corporate voice switches through wireless LANs:

QuickLink 52487
www.computerworld.com

Users Cite VoIP's Convenience, Cost Savings

LAKE BUENA VISTA, FLA.

DURING sessions at VoiceCon 2005, IT managers described the hunt for the killer VoIP app in many different terms. But convenient messaging, especially for on-the-go workers, was cited as a strong selling point for VoIP by multiple attendees.

For example, Janet Selinske, vice president of technical resources at Paramount Pictures Corp. in Los Angeles, said the film studio's executives "absolutely love" using PC-based softphone technology with VoIP because they can travel to a foreign city, plug a headset into a laptop and make calls over an IP network without incurring the typical calling costs. "They can be traveling, and people think they're at home," she said.

Several IT managers who are VoIP end users themselves said they enjoy the convenience of having unified messaging capabilities. That makes it possible to download voice-mail files into e-mail before boarding a plane and then play back the audio files while in the air, some noted.

Conversely, other IT managers said they can use commuting drive time to listen to e-mail messages that they've converted to voice via text-to-voice technology.

One of the best business cases for VoIP applications thus far has been in call centers, IT managers and analysts said.

Allan Rubin, manager of network engineering at Delta Air Lines, said the company's rollout of VoIP systems at its 17 call centers worldwide cost less than $10 million.

Rubin added that Delta expects to save more than $10 million annually on what used to be a $35 million budget for operating the telecommunications technology in the call centers.

New York-based Lehman Brothers Inc. has 15,000 VoIP endpoints globally and has deployed several applications in an effort to improve worker productivity, said Philip Palevo, vice president of network services.

One example is an application called QuickDial that's used by Lehman Brothers' equity research group to call customers and give them urgent information, he said. The firm's analysts can talk directly to investors if they answer, or leave short prerecorded messages if they don't, Palevo said.

– Matt Hamblen

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GLOBAL DISPATCHES
An International IT News Digest

Travel Services Firm Plans More Offshoring

BANGALORE, INDIA

EUROPEAN TRAVEL SERVICE TUI AG is expanding its IT outsourcing in India to further reduce costs and become more competitive in the travel booking market, an IT executive at the company's U.K. division said earlier this month.

Last November, Hanover, Germany-based TUI moved IT support for about 10,000 desktop systems and 300 departmental servers in the U.K. to Wipro Ltd., which is based here. That deal has yielded cost savings of 20%, said Keith Newman, IT director at TUI U.K. Ltd. in London.

TUI U.K. now plans to move all application development and support to India by the end of the year, Newman said. In addition, the U.K. division has begun talking to vendors in India about outsourcing management of its Unix servers and mainframes, he said.

Newman said TUI's German division is also exploring outsourcing in India. He estimated that by year's end, about 190 employees of Indian services firms will be doing outsourced IT work for TUI.

■ JOHN RIBEIRO, IDG NEWS SERVICE

GLOBAL FACT

50M

Number of wireless service subscribers in India.

SOURCE: REUTERS GROUP PLC

13 European Nations Unite to Tackle Spam

BRUSSELS

THIRTEEN EUROPEAN UNION countries last week agreed to cooperate in investigations and prosecutions of spammers located in other EU countries. The goal is to address the problems that occur when one country's antispam agency lacks the legal authority to investigate spam that originates in another EU member nation.

The voluntary agreement establishes a common procedure for handling cross-border complaints on spam and closes loopholes exploited by spammers and data thieves, the European Commission said in a statement.

"Enforcement authorities in member states must be able to deal effectively with spam from other EU countries," said Viviane Reding, the EU commissioner for information society and media.

The countries that agreed to the deal are Austria, Belgium, Cyprus, the Czech Republic, Denmark, France, Greece, Ireland, Italy, Lithuania, Malta, the Netherlands and Spain.

■ SIMON TAYLOR, IDG NEWS SERVICE

German Railway Moves Lotus Notes to Linux

DEUTSCHE BAHN AG, the company that manages Germany's railway system, has successfully migrated its 55,000-user Lotus Notes system to an IBM mainframe running Linux, IBM announced earlier this month. That was one phase of a much larger Linux migration undertaken by IBM and Berlin-based Deutsche Bahn's IT services unit, DB Systems GmbH.

Deutsche Bahn said it expects that all of its critical systems will be moved to Linux by the end of this year, including the company's Web servers, network infrastructure and enterprise applications, such as its SAP ERP system.

The Lotus Notes system supports not only e-mail but also 5,500 databases containing a total of 6.5TB of data. It runs on an IBM eServer zSeries 990 mainframe with SUSE Linux Enterprise Server Version 8. **52501**

Compiled by Mitch Betts.

Briefly Noted

Red Hat Inc. in Raleigh, N.C., last week said it has set up an IT facility in Pune, India, to provide support for its customers in that country and in English-speaking markets worldwide. Red Hat already has support centers in North America, the U.K. and Australia, but the India location will make it possible to offer round-the-clock support, the Linux vendor said.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Global Exchange Services Inc. in Gaithersburg, Md., announced last week that it will provide business-to-business e-commerce software for a pilot project that will link China's automakers and their suppliers. China Enterprise Communications Ltd., an IT and logistics services company in Beijing, is developing the eAutoHub exchange.

Denmark and Sweden have Western Europe's most advanced e-government systems for providing online services to citizens, according to a study by researchers at IDC's office in Milan, Italy.

Users Eye Computer Grids as Potential Servers for Mainstream Applications

Technology seen as 'virtual app server'; security issues, other obstacles remain

BY PATRICK THIBODEAU
BOSTON

Computer grids are emerging as potential application servers for mainstream business uses, which could broaden their deployment in corporate enterprises, said IT managers and vendors who attended the GlobusWorld conference here last week.

Most companies that have deployed grid technology are using it for compute-intensive processes. That's currently the case at Wachovia Corp., for instance. But Robert Ortega, Wachovia's vice president of architecting and engineering, said he believes grid computing may be ready for broader use. "We have started thinking of the grid as a virtual application server," said Ortega, who outlined his work with the technology during a presentation at the conference.

Wachovia has about 700 workstations in a grid, and Ortega expects that number will increase into the thousands over time. The Charlotte, N.C.-based financial services firm is using the combined CPU power of the systems for financial calculations in lieu of investing in more-expensive dedicated servers, he said.

Wachovia is testing a new version of New York-based DataSynapse Inc.'s GridServer software, which would allow Ortega to move application servers based on technology such as J2EE or .Net to the grid. "We're looking at this thing as a platform for running the services that make up an SOA," he said, referring to a service-oriented architecture.

In an SOA, for instance, an order management system could require reference data and security information from other applications. Ortega said the upgraded DataSynapse application, which was announced last week, can proactively cache information and make it available across a grid.

IBM has also developed a product, called WebSphere XD, that enables application resource sharing in a grid. The tool was released in November, and about six users are testing it, said Gennaro Cuomo, director of IBM's WebSphere Technology Institute.

Dan Kaberon, director of computer resource management at employee benefits management outsourcer Hewitt Associates LLC in Lincolnshire, Ill., said he sees the appeal of moving more applications to a grid but added that security remains an issue.

Balancing Security

"We're trying to balance the big-time advantages of shared resources against the security needs — that's the big trade-off," Kaberon said. For now, that means keeping some services physically separate, he noted. Hewitt is using grid technology to move some mainframe processes to commodity servers.

Grid adoption also faces other obstacles. Users at GlobusWorld, which was focused on the Globus Alliance's open-source grid tool kit, said many applications aren't written for grids that tap into hundreds or thousands of CPUs. In addition, software pricing is often based on per-CPU charges, which could make licensing unworkable for grids.

One thing that's critical is the use of grid standards, said Jim Cox, a delivery systems analyst and architect in The Boeing Co.'s IT shared services group. Boeing insists that vendors adhere to standards developed by the Global Grid Forum. "Without that, we've got chaos," Cox said. "We cannot afford this proprietary lockbox that we got ourselves in 12 to 15 years ago." **52560**

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Continued from page 1

HP Changes

focus on the delivery side."

After being appointed CEO in 1999, Fiorina oversaw the phaseout of the HP e3000 midrange systems line and the end of both PA-RISC and the company's Alpha processors.

Two operating systems — the e3000's MPE software and the Tru64 Unix technology that HP acquired when it bought Compaq Computer Corp. — also were put on the scrap heap.

Like Beauchemin, most users and analysts interviewed last week said they believe that HP is too far along to reverse course on those doomed systems, even if it wanted to.

Donna Garverick, a senior systems programmer at Longs Drug Stores Inc. in Walnut Creek, Calif., said any change in the status of the e3000 "would fall under the miracle category." But at this point, "we've got to see where HP is headed," said Garverick, who is a member of OpenMPE.org, a group that has been working to keep the MPE operating system alive.

Robert P. Wayman, who is HP's chief financial officer and was named interim CEO last week, worked to reassure customers about the company's direction in a conference call. "The board believes this is the right strategy," Wayman said when he was asked about HP's technology strategy.

Patricia Dunn, an HP director who was named nonexecutive chairman of the board, also said the decision to replace Fiorina doesn't signal any changes in strategy.

However, both Dunn and Wayman noted that HP's board doesn't have a strict set of conditions for CEO candidates. "Looking for someone who will fit in the culture is part of it, but that doesn't mean you want a leader that doesn't challenge that culture," Wayman said.

Uncertain Future

Analysts said anything is now possible, from a breakup of the company to changes in its product plans.

"HP has no choice but to move forward with Itanium," said Rich Partridge, an analyst at D.H. Brown Associates Inc. in Port Chester, N.Y. But he added that users need to consider the possibility of product road-map modifications, possibly to speed up HP's transition away from technologies such as Alpha and PA-RISC. That would help reduce the number of products the company has to support, Partridge said.

Frank Gillett, an analyst at Forrester Research Inc., said the leadership change "increases the uncertainty around Itanium-based businesses and about where that [technology] goes."

HP has placed big bets on the success of Itanium and says that its sales of systems based on the 64-bit technology are growing. But Gillett said the Itanium business has struggled to win over users.

That effort hasn't been helped by the growing popularity of Advanced Micro Devices Inc.'s 64-bit Opteron processor, which HP also now sells in some of its systems, or by Intel's addition of 64-bit capabilities to its x86 architecture. Both of those technologies offer "a compelling alternative in some cases" to Itanium, Gillett said. "I think the short-term advice is, don't make any big bets until this sorts itself out."

But Meta Group Inc. analyst Nick Gall said he doesn't see any immediate repercussions for corporate users in the wake of Fiorina's departure. He noted that there are still users buying Alpha-based systems, for instance. **52566**

HP's Board Looks to Speed Internal Execution

HEWLETT-PACKARD board member Patricia Dunn last week declined to give specific reasons for Carly Fiorina's dismissal from her job as chairman and CEO. But Dunn, who is now HP's nonexecutive chairman, said the board had been deliberating over the performance of the company and of Fiorina herself for "quite some time."

The timing of last week's announcement "was due to the fact that a decision was reached," Dunn added during a teleconference. HP's directors now "look forward to accelerating execution of the company's strategy," she said.

"We thought a new set of abilities was called for," Dunn said. "We're looking to accelerate the growth of the company, and we think that requires hands-on execution."

Fiorina indicated in the press release issued by HP about her ouster that she and the board had parted ways over operations issues. "While I regret the board and I have differences about how to execute HP's strategy, I respect their decision," she said.

Robert P. Wayman, HP's new interim CEO, has been with the company for 36 years and will also continue to work as chief financial officer while HP searches for Fiorina's replacement.

HP plans to report its first-quarter financial results on Wednesday. According to Wayman, HP expects its quarterly results to be in line with Wall Street's forecasts after adjusting for the effects of a $141 million payment to settle a patent-infringement dispute with Intergraph Corp. "The decision [to fire Fiorina] was made independently of the quarterly report," Wayman said.

– Stacy Cowley and Laura Rohde, IDG News Service

OUR TAKE

- HP was too box-oriented under Fiorina, says Don Tennant. **Page 20**
- HP's best hope is to listen to users – not pundits, says Frank Hayes. **Page 50**

The Fiorina Era at HP

1999

- **JULY:** Fiorina, then 44, is named president and CEO of HP after heading the global service provider business unit at Lucent Technologies Inc.

2000

- **JUNE:** HP spins off Agilent Technologies Inc., its testing and measurement products unit.
- **SEPTEMBER:** Fiorina adds chairman's title; HP says it is negotiating to buy the consulting unit of PricewaterhouseCoopers.
- **OCTOBER:** HP announces agreement to acquire middleware vendor Bluestone Software Inc.
- **NOVEMBER:** After a disappointing fourth quarter, HP ends talks with PricewaterhouseCoopers.

2001

- **MARCH:** HP combines its IT consulting, outsourcing and support operations into a single unit.
- **APRIL:** Fiorina reduces second-quarter forecast, says HP will cut 3,000 management jobs.
- **MAY:** HP introduces systems based on Intel's 64-bit Itanium chip, which it helped develop.
- **JULY:** Fiorina announces the elimination of 6,000 more jobs because of weak IT spending.
- **SEPTEMBER:** HP says it plans to acquire Compaq Computer Corp. in a $25 billion stock-swap deal.
- **NOVEMBER:** HP discloses that it will stop selling its HP e3000 midrange systems within two years.

2002

- **MARCH:** HP and Compaq shareholders approve the proposed merger, ending a six-month proxy fight.
- **MAY:** HP completes the Compaq deal and names Compaq CEO Michael Capellas its president.
- **JULY:** HP drops the middleware products acquired in the Bluestone deal; IBM agrees to buy the PwC Consulting unit HP once coveted.
- **NOVEMBER:** Capellas resigns to become CEO of WorldCom Inc. (now MCI Inc.).
- **DECEMBER:** Fiorina says she expects to reach a $3 billion cost savings goal from the Compaq deal a year ahead of plan.

2003

- **MAY:** HP combines its server and storage operations into a single enterprise products unit.
- **AUGUST:** The company falls short of third-quarter financial targets, its first earnings miss since buying Compaq.
- **NOVEMBER:** HP reports strong fourth-quarter results, with all business units profitable.

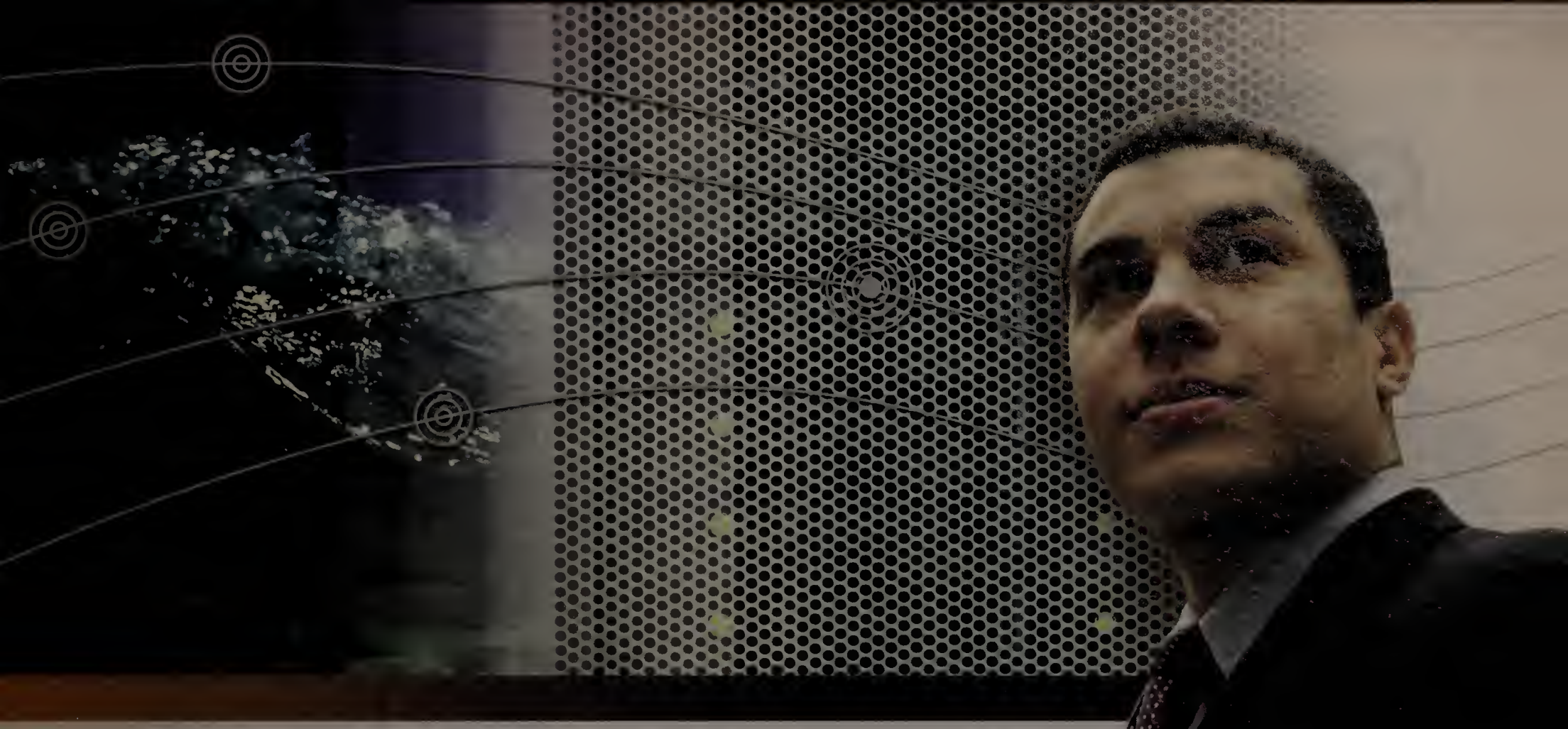
2004

- **MAY:** HP says it surpassed $20 billion in revenue for the first time in its second quarter.
- **AUGUST:** Fiorina fires three executives after server and storage sales drop 5% year to year in the third quarter; HP blames the shortfall partly on a flawed migration to a new SAP order-processing system.
- **NOVEMBER:** HP reports record revenue at each business unit and tops the $21 billion mark in its fourth quarter.
- **DECEMBER:** HP stops its Itanium research and development work and drops plans to integrate Compaq's Tru64 technology into HP-UX.

2005

- **JANUARY:** The company merges its PC and printer operations into a single unit.
- **FEBRUARY:** HP's board ousts Fiorina.

SOURCE: IDG NEWS SERVICE/FOLIO, HEWLETT-PACKARD CO



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Bush Plan Calls for More IT Spending

BY GRANT GROSS

President George Bush's proposed budget for the federal government's 2006 fiscal year, which starts Oct. 1, includes an increase in IT spending, despite significant cuts elsewhere.

The plan also asks Congress to permanently extend a research and development tax credit while terminating a program to develop high-risk, high-payoff technology.

The 2006 Bush budget cuts back or eliminates 150 government programs while calling for a 7% increase in government IT spending, to $65.1 billion. About 55% of IT-related funding would go to defense and domestic security programs. At the same time, the plan raises IT funding for the National Science Foundation by nearly 26%.

Separately, Bush's science and technology budget would drop from an estimated $61.7 billion in fiscal 2005 to $60.8 billion in 2006. The science and technology budget includes programs such as space exploration, renewable energy and agricultural research, as well as technology-related research and development at the National Institute of Standards and Technology (NIST).

Spending for information security at 17 federal agencies would increase by $113 million, or more than 7%, if Congress approves Bush's budget plan. The Information Technology Association of America (ITAA), an industry trade group, praised the IT budget plan.

"America must pick up the pace in science, math and engineering," ITAA President Harris Miller said in a statement. "Countries around the world have clearly signaled their intent to challenge U.S. leadership in technology. Our economic well-being depends on answering this challenge."

Research Tax Credit

Bush's budget plan would also provide $27 billion through 2010 for the Research and Experimentation Tax Credit.

First passed as a temporary edict in 1981 and extended multiple times, the tax credit allows U.S. companies a credit of up to 10% of R&D spending.

At the same time, Bush's 2006 budget would eliminate the NIST Advanced Technology Program, which provides funding for high-risk, high-payoff private-sector technology R&D, according to NIST.

Bush has been trying to eliminate or make major cuts in the program since taking office in 2001, but Democrats in Congress have fought the effort.

The Advanced Technology Program received an estimated $137 million in funding in the 2005 budget.

The funds in the program can be better used in other areas, said John Marburger, director of the White House Office of Science and Technology Policy. 52506

Gross is a reporter for the IDG News Service.

Bill Seeks to Fix E-voting Flaws

BY GRANT GROSS

A group of U.S. lawmakers last week introduced a bill to require that electronic touch-screen voting machines allow a voter-verifiable paper trail.

The Voting Integrity and Verification Act would require printed ballots that voters could check after they use an electronic voting machine. The bill, introduced by Sen. John Ensign (R-Nev.), would add clarifying language to the Help America Vote Act, passed by Congress in 2002.

Ensign, who counts four Democrats and three Republicans as co-sponsors of the bill, noted that Nevada required a voter-verified paper trail during the 2004 presidential election.

A voter-verified paper trail would allow voters to review a printout of their ballots and correct any errors before leaving the voting booth. The printout would stay at the polling place for use in any recounts.

Critics of e-voting have complained that voters using electronic touch screens can't know if their votes are being properly cast and that recounts can't be conducted without some kind of voter-verifiable paper trail.

November Glitches

In November's general election, problems with e-voting machines caused about 4,400 votes to be lost in one North Carolina county and gave President George Bush more than 3,800 extra votes in an Ohio county.

E-voting machine vendors have suggested that adding printers would raise the cost of machines. The printers could also jam or break, causing long lines at voting booths.

Some e-voting machine vendors have begun offering paper-trail printers. Nevada used machines from Sequoia Voting Systems, partly because the vendor offered paper-trail technology. 52509

Gross is a reporter for the IDG News Service.

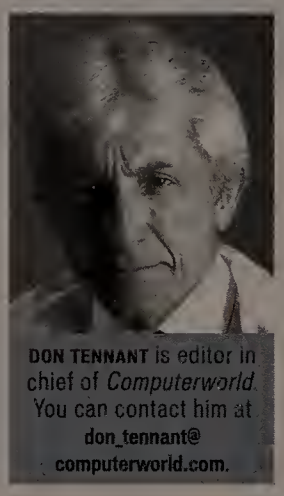
DON TENNANT

Platt in Pumps

I WOULD JUST LOVE to have been in the room when Carly Fiorina got the word that she was getting the boot. I have a hunch the discussion with Hewlett-Packard's board went something like this:

Board Member 1: "Good morning, Carly. You're probably wondering why we called you here this morning. . . . Pat, do you want to take it from here?"

Board Member 2: "Um . . . sure. You see, Carly, the thing is, as you know, things haven't been going all that well for us lately, and . . . well . . . um . . . Dick, you expressed it well during the dry run . . ."



DON TENNANT is editor in chief of *Computerworld*. You can contact him at don_tennant@computerworld.com.

Board Member 3: "Right. Carly, you know we love you, but these gosh-darn shareholders keep asking why in the heck we can't seem to get our act together and start making them the money we promised we would when we went after Compaq. I mean, you can't blame them . . . you know . . . Lucy, why don't you jump in here?"

Board Member 4: "Thanks, Dick . . . Carly, maybe it will help if I tell you a story about when I was a little girl . . ."

And so on. You just know it had to be mighty tough to drop that particular bomb. Fiorina is tough as nails, and I can't imagine anyone wanting to be on her bad side.

But toughness is a two-edged sword. It was Fiorina's icy fortitude that beat Walter Hewlett in the proxy fight that cleared the way for HP to acquire Compaq in 2002. On the other hand, the financial results that toughness yielded have been nothing if not disappointing, to the point where Fiorina fired three top executives last summer when HP's server and storage business tanked. The fact that Fiorina opted to brandish her toughness sword rather than fall on it herself apparently made it clear to an increasingly antsy board that she wasn't going to go without a push.

Now that the push has been made, Fiorina isn't asking herself where she went wrong, because she's convinced everything she did was right. But make no mistake: She screwed up.

What Fiorina needed to do when she made her high-profile ascension to HP's throne in 1999 was to remake HP in IBM's image. She understood that, but she didn't understand how to do it. That first became apparent when she passed up the golden opportunity to acquire the consulting arm of PricewaterhouseCoopers in 2000, only to see IBM snatch it up in 2002. Instead of making a key acquisition as part of a strategic plan to transform HP into a more competitive global services provider, Fiorina opted to acquire Compaq to dramatically boost the scale of HP's hardware business. So much for following the IBM model.

So this is what HP needs to do to recast itself in that IBM mold once and for all:

- Spin off its lucrative imaging/printer business. IBM spun off its printer business in 1991 to form Lexmark, which reported record revenue and profits for 2004.
- Find a Chinese computer company to unload its languishing PC business on. That worked for IBM, too.
- Go on the prowl for a consulting firm (other than EDS — let's not go into this blindly) to give Ann Livermore, executive vice president of HP's technology solutions group, something she can really work with.

In fact, I'd go all the way and give Livermore the CEO nod. She's about as different from Lew Platt, Fiorina's predecessor, as you can get. Fiorina, with her box-pushing focus, was Platt in pumps. And that, more than anything, is why she and Platt now have even more in common. **52521**

Don Tennant

THORNTON A. MAY

Health Care Needs 'IT Value Docs'

AT THE IT Leadership Academy, scholars are involved in a three-year mission to map what roles, responsibilities and skills the next generation of IT leaders will need to be successful. One emerging role being examined is that of "IT value doctor." That's someone who cures "IT value diseases" — attitudes within an organization that are hostile to or suspicious of the value IT can provide — by fixing what is broken, preserving economic health and making things better via innovation.

It's ironic, given this medical metaphor, that the industry most in need of value doctoring is health care.

Look at these statistics, drawn from a federal government report released last summer called "The Decade of Health Information Technology":

THORNTON A. MAY is a longtime industry observer, manager, consultant and commentator. Contact him at thorntonamay@aol.com.

- An estimated 31% of the national health care bill in 2004 was for administration.
- Experts agree that a sizable amount of money could be saved (their estimates range from $78 billion to $140 billion a year) by moving to electronic patient records in a network with open communications standards.
- Only 13% of U.S. hospitals have electronic patient record systems.
- An estimated 45,000 to 98,000 people die each year from medical errors such as misunderstood handwritten prescriptions or lost lab results.

Cliff Dodd, CIO at Kaiser Permanente, once said, "Coming into [health care] from financial services and telecommunications, I concluded that the industry is about 10 years behind in the application of technology and at least 10 to 15 years behind in leadership capability from the technology and perhaps the business perspective."

Surgery by IT value doctors is required. Compared with other vertical

markets, the health care industry hasn't invested heavily in IT. Health care industry investment in IT is about $3,000 for each worker, compared with $7,000 per worker on average for industry in general, according to Forrester Research analyst Eric Brown.

In other industries, IT has pretty much evolved beyond the mere automation of work processes. The health care industry is still persistently manual. The goal immediately before the industry is to improve care and reduce costs by abandoning paper for a digital system of handling patient records, claims and payments.

Here are some suggestions for IT value doctors to improve the prognosis for IT in the health care industry:

- Document value "illnesses," paying particular attention to mental illness — dysfunctional mental models held by key constituencies.
- Make use of existing IT initiatives as a way to begin changing the values and beliefs of executives who are as yet unconvinced of the value of IT.
- Make a concerted effort to change executives' behavior and attitudes toward IT, focusing on the three most common reasons for resisting change: a desire not to lose something of value, a misunderstanding of the change and its implications, and a belief that the change doesn't make sense for the organization.
- Institute continuing technology education for every caregiver and administrator.

We stand on the cusp of a new age of science, with research bringing us to the edge of being able to "program" biological processes. It would be tragic if the promise this age holds were threatened because we couldn't get the current generation of caregivers and administrators to nurture their technology imaginations and abandon Victorian medical practices and mind-sets. **52406**

PIMM FOX

Seeing the Limits of Technology

PIMM FOX is a London-based journalist. Contact him at pimmfox@pacbell.net.

LAST WEEK, I watched *All the President's Men*, the film about the Watergate break-in and the subsequent revelations of political dirty tricks in the Nixon White House.

The reporters at the heart of the story, Bob Woodward and Carl Bernstein, helped turn a whole generation of preteens into journalist wannabes. Watching their crusade to discover the truth about our leaders, and seeing the uncompromising integrity of *The Washington Post*, is still exciting and inspiring today.

But 1974 seems a long time ago to this onetime wannabe. Yes, it was an age of computers, but they were big, clunky machines that sent astronauts to the moon. On Earth, your closest shot at a piece of technology might be a calculator, television set or stereo.

Technology has moved on, and so must I.

After writing this column for nearly four years, it's time to clear the decks for a different perspective. Having an opinion about technology that isn't born of frustration hasn't always been easy. When IT works the way it is intended, it is a dream fulfilled. But lose your Internet connection, your mobile phone or your electronic address book, and your day is ruined. Have your computer stolen, as my wife recently experienced at London's Heathrow Airport, and you begin to recognize the consequences of identify theft, fraud and our heavy reliance on technology.

For some tasks, there is now no choice but to engage with the digital world, which renders our interactions more tenuous and prone to random error. Have your mobile phone and computer stolen, and even the seemingly simple task of contacting credit card companies and banks presents an interesting challenge.

The world may come on a chip, but that doesn't make it any more secure. Our computers may hum more efficiently, process more powerfully and automate more drudgery, but they don't offer more privacy.

The yin and yang of technology isn't just a debate about the pluses and minuses of staring at a screen or automating your billing cycle. Technology makes it all too easy to forget how to do things. Put away the calculator and test your ability to do long division. Put away the push-button phone and reacquaint yourself with the virtue of patience. Log off of your computer and write a letter, and demonstrate the penmanship that speaks volumes about your character.

These are all difficult things to do, but when I caught myself spending hard-earned money to purchase an old 1950s rotary telephone originally issued by the General Post Office, well, it seemed the right moment to consider whether I had gone through technology's tunnel and come out the other end.

And yet of course I found the telephone for sale using the Internet. Without the Internet, I would be as lost as I was last week when I tried to tell the taxi driver in Budapest where to go. Luckily, I had my mobile phone and could call a Hungarian-speaking friend for directions.

The threats from technology are as man-made as those from overreaching politicians, ruthless tyrants or bad CEOs. These worries existed before technology played such a powerful role in our lives and will be here long after we have ceded the planet to our children and grandchildren.

Our task is to guide the use of technology in ways that are responsible, caring and humble.

If we don't, we'll be in big trouble.

Oh, and if you are still convinced that technology is a necessity, consider this: In *All the President's Men*, there are no computers or mobile phones. Old-fashioned legwork brought the lawbreakers to justice. **52459**

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READERS' LETTERS

If the Board's Your Goal, Get Out of IT Now

CIOs can earn their way onto a board of directors by dealing with strategy issues while gaining the gray hair and scars typical of most public company board members ["CIOs on the Board," QuickLink 51548]. Being a CIO probably isn't enough. Boards provide oversight to the general management of an enterprise. A significant number of years in general management is great preparation for board membership. One of the several experiences that would be valuable for a board candidate would be a stint as a CIO. That stint should have been several career moves prior to the board membership. I base these comments on my 25 years of board membership, five years as a senior IT leader and 20 years of providing counsel to IT and general management about IT issues.

Regarding specific advice in the article, an MBA is good for your current and next job, but it's not a significant factor in the board member's tool kit. The SIM Regional Leadership Forum is also good for a new or soon-to-be CIO but not relevant for the board candidate. Demonstrate an interest in the business? Anything less is nearly automatically fatal for a board candidate. And finally, don't request a "temporary rotation out of IT." If you've had a senior IT role for three to five years and have your eye on a board position, *get out of IT now!* Join a start-up or start one up yourself. Work your way into a troublesome business unit in a senior role. Set your sights on becoming a general manager (whatever it is called in your industry) and make it happen.

In parallel, start developing your network to include a number of existing board members and CEOs. They are the sources for board candidates, and whether or not a formal search is used to fill a board slot, the final decision is almost always directly or indirectly made by the board members and CEO.

John Blair
Management consultant, Carefree, Ariz.

ARAD Article Snubbed Clarion

THE ARTICLE on architected rapid application development ["Fast-moving Development: ARAD Tools Can Cut Costs," QuickLink 51559] unfortunately left out what I consider the granddaddy of all ARAD vendors, SoftVelocity Inc.'s Clarion language and development environment. Clarion products (originally from Clarion and then TopSpeed before it was bought by TopVelocity) have offered template-driven programming since at least 1991, when I started using them. Clarion yields huge productivity gains; I can tell you I was never as productive producing data-driven apps as I was using Clarion. I wish SoftVelocity would put out a Clarion product for Linux.

Steve Litt
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EMERGING TECHNOLOGIES
Why WiMax
Development of WiMax technology is moving more slowly than its hype, but it holds the promise of high-speed mobile connectivity, a new disaster recovery option and lower cost. **Page 26**

FUTURE WATCH
Spring Comes to AI Winter
Artificial intelligence, once the darling of computer scientists and science fiction writers, fell into disrepute in the 1980s. But it's made a comeback, say AI enthusiasts like Jeff Hawkins. **Page 28**

SECURITY MANAGER'S JOURNAL
Disaster Recovery Planned on the Fly
C.J. Kelly learns that her new employer has offices in a flood zone and scrambles to develop a disaster recovery plan. **Page 30**

Vendors are racing to retool ERP software around service-oriented architectures in an effort to make deployment and integration more flexible. But the move toward componentized applications could bring its own set of challenges. **By Robert L. Mitchell**

WHEN John Schindler thinks of enterprise resource planning software, *business flexibility* isn't exactly the first phrase that leaps to mind, he says. But increasingly, that's what he and other users are demanding from their ERP vendors. "We're in a growth mode, and the business needs are changing," says Schindler, CIO at Kichler Lighting Group in Cleveland. The problem is that today's ERP systems haven't adapted quickly enough to those change requirements.

After rising to prominence in the 1990s, ERP systems have evolved into large, monolithic architectures with many functional modules that can take months — or years — to plan and deploy. The systems require complex customizations in order to be tailored to business processes, and integration with other applications requires programming to APIs. Many large companies have dozens, or even hundreds, of point-to-point connections that must be maintained. At Starwood Hotels & Resorts Worldwide Inc., for example, Vice President of Technology Kevin Malik says his SAP system supports about 100 external and internal interfaces. As a result, upgrading the system to Version 4.7 was a five-month project that involved more than 20 people.

"The old way of doing things is just not scalable," acknowledges Roman Bukary, vice president at SAP AG.

ERP systems have also been relatively inflexible in responding to changing business needs, often requiring major software upgrades to accommodate even seemingly discrete business process changes. "Today, 99% of our customers have modified the source code of the systems they use from us, and all of them wish they could undo that. The hidden cost of customizing these systems is really high," as is the ongoing maintenance, says Cory Eaves, chief technology officer at ERP vendor SSA Global Technologies Inc. in Chicago.

Now the major ERP vendors have adopted a new mantra as they race to recast their software offerings under the umbrella of service-oriented architectures. By refocusing their software to support SOAs, replacing proprietary application programming interfaces with message-based Web services, vendors say they can offer unprecedented flexibility. Deployment and integration will be easier and will require less custom coding. And by breaking down traditional application modules into smaller components and exposing those as reusable Web services, users will be able to create custom implementations by choosing and arranging only those components they need, vendors say.

Will It Work?

Users have reason to be skeptical. Programmers who integrate and maintain enterprise applications have heard this promise before with CORBA and DCOM, which turned out to be diffi-

MELINDA BECK

ERP at YOUR SERVICE

Open Source ERP Advances

Open-source has become an integral part of the technology infrastructure that supports ERP systems. "The ERP vendors are embracing open-source technologies, especially at the platform level," says Albert Pang, an analyst at IDC in Framingham, Mass. Support for Linux and JBoss application servers is common, and many enterprises use the software, says Pang. SAP built its NetWeaver Developer Studio on the Eclipse integrated development environment, and "[Linux] has eclipsed Solaris as the second-most-preferred platform for the Oracle ERP applications right behind Windows," Pang says.

Menasha hosts its SAP software on Linux systems and is contemplating expanding its use of open-source. "I'm trying to make a decision on what application server I'm going to use to host our integration server. I'm leaning toward JBoss," says Rob Crawford, a senior systems analyst at Menasha. Even users who don't run open-source benefit from it as a negotiating tool, says James Governor, an analyst at RedMonk. "If you are going to SAP and IBM, keep JBoss in your back pocket. Open-source is like a personal trainer for proprietary software. It's about that balance point, keeping vendors on their toes," he says.

Now open-source ERP applications are starting to get attention. SQL Ledger accounting software from DWS Systems Inc. in Edmonton, Alberta, and Compiere from ComPiere Inc. in Monroe, Conn., compete directly with commercial ERP systems. Initially targeting small and midsize companies, the two vendors' represent a "renegade force in the open-source ERP environment" that could eventually shift power away from the large ERP software vendors, says Pang.

In the future, Pang says, companies will standardize on one or two sets of accounting applications and supplement that with some open-source applications at the ERP level. Those applications could be delivered through integrators or value-added resellers as Web services. While initial uptake will be among small businesses, the potential cost savings have attracted the attention of large operations, such as General Electric Co.'s consumer appliances division, Pang says. "The bottom line is as a whole the average selling prices are going to be much lower than what you would pay for something from SAP or Oracle or even Sage Group because software is basically free," he says.

– Robert L. Mitchell

cult to implement and expensive to maintain. Likewise, integration broker products from companies like WebMethods Inc. and Tibco Software Inc. promised to break the cycle of constructing point-to-point interfaces between applications by creating a central integration hub, but they were too complex, says Eaves. Like integration brokers, SOA uses a hub-and-spoke design, also called a service bus, but there's one key difference: "These [Web] standards-based approaches have driven a lot of the complexity out of solving these problems," says Eaves. Unlike quasi-standard approaches of the past, the underpinnings of SOA, such as HTTP, XML, SOAP and SSL, are well understood, he says.

For Schindler, the first order of business is "to get rid of 75% of the customizations" as Kichler migrates to PeopleSoft 8.9 next year. Although he sees the software's support for XML and Web services as immature, Schindler says he expects it to evolve to the point where, in two or three years, he will be able to "intertwine business processes from different vendors and have reusability."

Spheres of Influence

ERP vendors have their own reasons for going down the SOA path. "The issue is not to make the end user happy. It's more to get [ERP vendors] out of the hard-coded API arena," says Bill McFadden, president of Plant-Wide Research Group in North Billerica, Mass.

Such moves are also defensive. Increasingly, ERP systems revolve around middleware platforms on which much of the integration work is done. For example, basic processes and application code may be manipulated using IBM's WebSphere or Microsoft Corp.'s .Net. ERP vendors have had to choose between aligning themselves closely with one of these middleware "ecosystems" or building their own. With projected single-digit growth for ERP software, the build-your-own path is one that few vendors can afford. But that's the course that SAP chose.

"From SAP's perspective, the danger was middleware suppliers would become the strategic platform in many R/3 customer shops," says James Governor, an analyst at RedMonk LLC in Bath, Maine. NetWeaver is SAP's attempt to control the entire software stack. SAP has also announced that with the release of mySAP ERP 2005 in 2007, it will break its ERP software into even more granular, self-describing components that will be exposed as Web services. Users can then combine them to create customized, loosely coupled composite applications, which SAP calls xApps.

That appeals to SAP user Aaron Nichols, general manager at Canada Post Corp. in Ottawa. "There are certain pieces of functionality that we use in order creation that we'd like to extend outside of our enterprise," he says, but each customer has different business processes. He hopes to customize the application for each customer by picking and choosing only the services needed. "It will give them the features they want, and I can reuse them in every application without having to run them more than one time," he says.

PeopleSoft Inc. cast its lot with IBM, making WebSphere its preferred middleware, but its acquisition by Oracle Corp. has put the future of that strategy in doubt. So far, PeopleSoft has Web-enabled more than 1,000 "entry points," says Roy Satterthwaite, vice president of marketing at PeopleSoft.

Schindler says he isn't worried about Oracle's plans yet. "The first real impact will come with the release of PeopleSoft 10, which is at best, 36 months out," he says. For now, Kichler will stay the course, says Schindler.

Oracle has its own application server and middleware tools for its E-business Suite, but its overall SOA strategy hasn't been well articulated, analysts say. "Customers don't want multiple siloed repositories of information. They want one source of truth," says Fred Studer, vice president of ERP at Oracle.

The problem is that in the real world, most organizations have to live with many repositories, and that mindset has held the vendor back, says Governor. Oracle has been busy wrapping its traditional APIs with Web services interfaces and is actively building more. But whether it will go as far as SAP is less clear. "When you break big applications into smaller parts, you can rearrange those or put events in the middle of those tasks. Oracle hasn't really caught up to this yet," says Yvonne Genovese, an analyst at Gartner Inc.

Smaller ERP vendors, including Lawson Software Inc., IFS AB and SSA Global, have launched their own SOA initiatives. "We've standardized on Java and WebSphere," says SSA's Eaves. Analysts say all ERP vendors will eventually fall into the sphere of one of a few middleware providers, which include Microsoft, IBM, SAP and possibly Oracle. But none of the vendor initiatives are fully baked yet, cautions McFadden. "My guess is that it will take at least five to seven years to shake out."

Once ERP systems have made the jump to SOA, improved interoperability could make it possible to use best-of-breed ERP products — a strategy that up until now has been an "integration nightmare," says Kichler's Schindler. But organizations that fail to first impose a top-down architecture could be destined for trouble.

A mix-and-match infrastructure might work, but only within parameters set by IT, says Governor. "SOA lets the line of business choose a component, but it has to fit into the SOA set by the IT organization. This is not about unfettered, do whatever you want sort of stuff," he says.

Rob Crawford, senior systems analyst at Menasha Corp., an SAP user in Neenah, Wis., worries about version control and service registration issues. "If you upgrade the back end, your Web services are going to change. You'll have to find a way to version your Web services or extend them," he says, as well as a way to know what other components are relying on those services. Canada Post's Nichols also wonders how well these systems will scale. "All of these concepts come along, and they are supposed to be the solution, but then they add more complexity," he says.

Web services are not a panacea, Eaves acknowledges. "If you do a lot of customization, you will get yourself painted into a corner, just as you do today with the native interfaces," he says.

A world of distributed components linked by Web services has Starwood's Malik wondering about regulatory compliance. He says a six-month, all-out testing effort that was part of a Sarbanes-Oxley Act compliance project was complicated enough. "With Sarbanes-Oxley, we're cautious about trying to componentize the system because it's just that much more work to test," he says.

Overall, however, users are pushing for the changes. "I very much support the intent," says Schindler. Governor sees another benefit as well. "Once you begin to describe things as components, it's difficult to maintain control of it. It becomes more difficult to lock in [users]," he says. **52278**

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OUTLOOK: These wireless broadband technologies promise office-grade connections almost anywhere and breakthroughs for disaster recovery – eventually.

By Joanie Wexler

Why WiMax

EMERGING TECHNOLOGIES

THE HOT NETWORK TECHNOLOGY DU JOUR is WiMax, an informal term that covers two emerging broadband wireless standards for metropolitan-area networking. WiMax promises alternate routes to land lines for disaster recovery and relief from the price and service tyranny of the incumbent local-exchange carriers. It also has a compelling high-speed mobile component.

WiMax has the potential for what Carlton O'Neal, vice president of marketing at Tel Aviv-based broadband wireless manufacturer Alvarion Ltd., describes as "high-quality broadband everywhere that mirrors your connectivity experience in the office."

To the casual observer, WiMax backhaul services might not seem substantially different from today's broadband wireless access (BWA) services, though speed and coverage range are expected to improve. However, having standards for non-line-of-sight (NLOS) BWA products will create economies of scale and vendor interoperability, which should help WiMax-based services proliferate beyond the niches where BWA services can currently be found. This means that the benefits of BWA as a land-line alternative should theoretically become available to more sites and users.

"Fixed" access services and products will emerge in early 2006, followed by the mobile flavor a year or so later. There are two corresponding WiMax standards:

- **IEEE 802.16-2004** for fixed point-to-point and point-to-multipoint wireless access. It's akin to a faster, airborne version of Digital Subscriber Line (DSL) or cable-modem services and became the industry's first NLOS BWA standard last June.
- **IEEE 802.16e,** for mobile wireless access from laptops and handhelds. It's analogous to a faster version of third-generation telecommunications technology. WiMax proponent Intel Corp. has promised 802.16e-enabled laptops by early 2007.

Intel is also involved in the 802.16-2004 standard effort. The vendor says it's providing silicon to Alvarion, Proxim Corp. and Redline Communications Inc., which are manufacturing last-mile fixed products for the carrier market.

The technologies based on the two standards operate in licensed and unlicensed frequency bands below 11 GHz. The standards are being overseen from a market-acceleration standpoint by a 230-company consortium called the WiMax Forum.

Enterprise Impact

WiMax is being deployed from the top down as a carrier technology first, which means that schedules for service availability are dependent on widespread testing and buy-in. WiMax product standards certification and interoperability testing, overseen by the WiMax Forum and to be conducted by independent test lab Cetecom Spain in Malaga, is slated to begin in July.

Once services become available, growing business sites should gain inexpensive broadband access with speeds between T1 and T3 line capabilities. And because they're airborne, these services can be quickly deployed — often in a day's time — and bypass lengthy ILEC lead times.

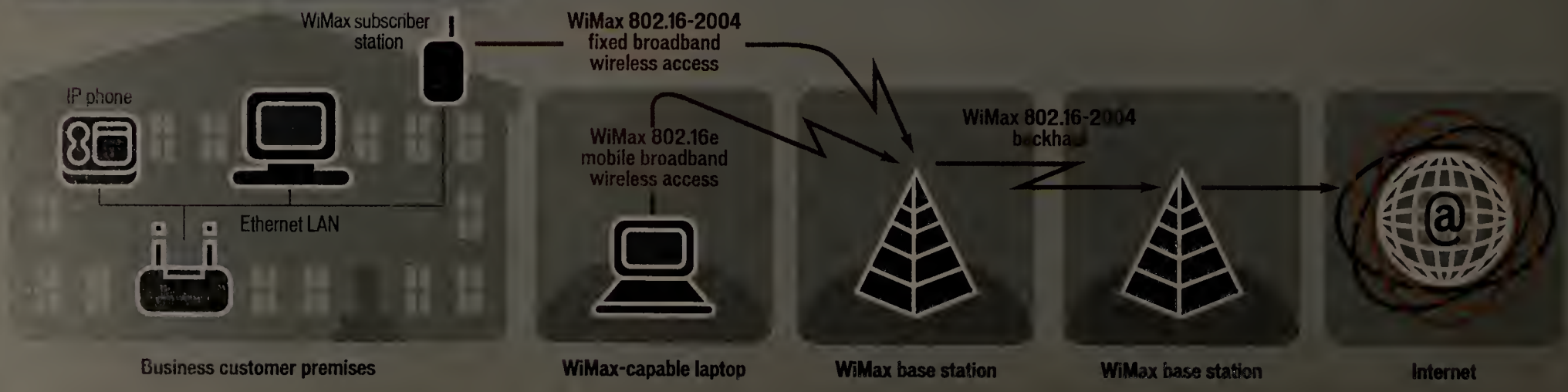
"Every enterprise struggles with the cost of [local] access, which is often 40%" of a telecommunications bill, says David Willis, an analyst at research firm Meta Group Inc. "The natural monopolies have starved out local competition. But WiMax doesn't require dealing with lobbyists or tariffs."

Adds Alan Menezes, vice president of marketing at Aperto Networks Inc., a maker of BWA products in Milpitas, Calif., "Enterprises gain alternatives to the [regional Bell operating companies] and backups to terrestrial T1 and fiber links that can be cut at the same time." In addition, WiMax comes ready-made with provisions for quality of service (see "QoS Advantage," next page), so many prestandard services already support voice over IP, unlike many DSL and cable-modem options.

And standards-based technology should drive down customer premises equipment (CPE) costs for fixed connections, from about $800 today to $300 to $400 in 2006 or 2007, says Bob Egan, president of Mobile Competency Inc., a consultancy in Provi-

WiMax at Work

This diagram illustrates a mature wireless system based on WiMax standards. WiMax could provide broadband last-mile data and voice competition to the incumbent local-exchange carriers and, eventually, a higher-speed alternative to traditional mobile services.



QoS Advantage

A big WiMax selling point is that it comes with quality of service built in. Struggles with standardizing QoS have been a downfall of WiMax's cousin, 802.11 wireless LAN technology, or Wi-Fi, whose 802.11e QoS standard extension seems perennially six months away from being ratified.

What's actually described in the WiMax specification are four types of scheduling services for polling client devices about whether they have packets to send. The four classes apply to all versions of 802.16, explains Gordon Antonello, who heads a WiMax Forum technical working group.

However, the spec describes only what is to be supported, not how vendors are to implement it, Antonello notes. So whether different vendors' QoS implementations are actually interoperable will be determined when the WiMax Forum conducts product testing next summer.

Here are the basics of the four scheduled services specified by WiMax (in all cases, the base station controls scheduling):

1. **Unsolicited Grant Service (UGS)** will support VoIP without silence suppression to support a continuous packet stream.
2. **Real-Time Polling Service (rtPS)** will support VoIP with silence suppression (supporting packets sent only when a person is talking) and MPEG video.
3. **Non-Real-Time Polling Service (nrtPS)** involves polling devices periodically to maintain a minimum data rate for applications such as file transfers.
4. **Best Effort** means that there are no guarantees of service quality. But the speed and bandwidth provided by WiMax make it a good best-effort bet.

– Joanie Wexler

dence, R.I. Meta Group is even more bullish: Willis says he expects WiMax CPE to drop to $70 by 2007.

Finally, businesses can buy WiMax-certified products to install in their campus-area networks as alternatives to private fiber connections and more-complex wireless bridging options.

Disaster Recovery Shoo-in

According to vendors, service providers and analysts, starting in about 2007, an important 802.16-2004 application for enterprises will be disaster recovery — whereby the wireless link serves as either the primary or the backup connection. The reason is that two terrestrial links are likely to be cut simultaneously.

"It's hard for a backhoe to cut packets flying through the air," says Brian Chernish, network operations director at Western States Insurance, a 27-site company in Missoula, Mont. For about three years, Western States has been using pre-WiMax BWA services from TransAria Inc., a managed data services provider covering six states in the northwestern U.S. TransAria says 70% of its customer base is using "WiMax-class" services deployed with Aperto equipment.

"There's a cost advantage to me already with wireless: I'm paying about one-third the cost for a broadband wireless link as I would for a comparable wired T1," says Chernish. When the mobile version of WiMax emerges, "I should be able to drive around with a broadband VPN for voice and data procured from a single provider," he adds.

"Prior to 2001, no one had a serious disaster recovery budget," says Egan. "Alternative backhaul and disaster recovery should be the primary things about WiMax on enterprise minds now."

For example, WiMax-bound TowerStream Corp., a BWA provider operating in five large U.S. markets, offers a pre-WiMax disaster recovery service, whereby a full T1's worth of bandwidth sits available for $175 per month as a backup in case a primary link should fail. The Waltham, Mass.-based company, which plans to expand into 10 U.S. markets, also offers its customers the option of turning up their wireless speeds over the weekend for data backups, for which they pay a temporary premium, says Jeff Thompson, the carrier's chief operating officer.

Regional and local service providers can look forward to the benefits of WiMax, if they are delivered as promised in infrastructure equipment.

"We have more customers than we have bandwidth available," says Rod Mitchell, general manager of broadband services at Midwest Wireless LLC, a broadband wireless and cellular service provider in Mankato, Minn., that serves Minnesota, Iowa and parts of Wisconsin and South Dakota using an Alvarion BWA infrastructure.

"Enterprises are using more bandwidth everyday," says Mitchell. "Instead of selling a 512Kbit/1Mbit/sec. pipe [upstream/downstream, respectively], I should be able to offer 2Mbit, 4Mbit and more than 15Mbit/sec. symmetrical speeds" with WiMax, he says.

But WiMax services aren't necessarily a slam-dunk. "If it delivers all that's promised, I'm for it," says Todd Graetz, chief technology officer and vice president of operations at TransAria in Bozeman, Mont. Those promises include lower subscriber-unit costs, 40% to 50% extended-coverage ranges, depending on the frequency used, and faster speeds. Graetz says he hopes for "an order of magnitude" improvement over his current 40Mbit to 60Mbit/sec. Aperto products. "If I see enough of those items, I'll put WiMax on the network," he says.

Since businesses shy away from multiple carrier relationships, which are complex to support both from a technical support and a billing standpoint, regional carriers such as TransAria and TowerStream have begun entering into wholesale and aggregator partnerships. Through the partnerships, customers can use all their services through a single provider.

The traditional big-name carriers refuse to publicly commit to the fledgling technology. Sprint Corp. and Nextel Communications Inc. likely have the most to gain from WiMax, because the merging companies collectively own a heap of spectrum in the 2.5-GHz licensed band, one of the U.S.-sanctioned frequencies for BWA traffic such as WiMax. They have licenses in well over 100 top markets, Egan says. The companies declined to comment on their WiMax plans, however.

Verizon Communications Inc. is focusing most of its last-mile efforts on a well-publicized fiber-to-the-home effort in 11 states. However, "we're always evaluating a number of trials of different wireless-access technologies," says spokesman Mark Marchand.

For its part, Verizon Wireless prefers to concentrate on "selling bananas from the banana truck; that is, promoting the service offerings we have today" — namely, CDMA 1xEV-DO 3G technology — rather than "blowing forth on technology that's so far out," says spokesman Jeffrey Nelson.

Is Intel doing its part to push 802.16e into the mobile network operator infrastructure so its forthcoming WiMax-capable notebooks will have networks to connect to? Walter Gintz, market development manager at Intel's wireless network group, says only that "we're having discussions surrounding mobility with all different parts of the mobile ecosystem."

Reviving Competition

Given that the Federal Communications Commission ruled in December to largely free telecommunications incumbents from their unbundling obligations to competitive local exchange carriers (CLEC), WiMax is perhaps one of the last-gasp hopes for getting better local-loop services faster at better prices.

At press time, Chernish had been waiting several weeks for his incumbent operator to install a T1 as a backup redundant link to his wireless link in a critical location. Chernish says he would "love to see the incumbents get taken out of the picture."

"And alternative operators, such as cable operators, might play in the WiMax space," suggests Egan.

Graetz says that wireless allows his company to "bypass the incumbent switched network and control the last-mile and overall experience for the customer."

He observes that earlier CLECs raised funding to just resell incumbent services. "They didn't succeed, because their entire business plan was dependent on their sworn enemy," in that they required cooperation in using some or all of the incumbents' network elements to provide service, Graetz says.

Willis is predicting "early adoption in rural markets and wireless backhaul within the carrier networks" but says the industry won't see broad adoption of WiMax until 2009, when economies of scale are likely to kick in. **52287**

WiMax Basics

There are two versions: 802.16-2004 for "fixed" access, 802.16e for mobile access.

QoS requirements are specified in the standard.

Security (DES, 3DES and AES encryption) is specified in the standard.

WiMax supports IP and traditional TDMA (circuit-switched) applications.

Licensed spectrum is preferred for carrier-class WiMax service offerings. Early U.S. services are being developed for 5.8-GHz (unlicensed) band, because many regional carriers committed to WiMax don't hold licenses in the 2.5-GHz band, also approved for WiMax use in the U.S. Outside the U.S., licensed 3.5-GHz bands will support WiMax. U.S. approval for 3.5-GHz WiMax usage is expected eventually.

Wexler is a freelance writer in Campbell, Calif. She can be reached at joanie@wexler.com.

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Spring COMES TO AI WINTER

A thousand applications bloom in medicine, customer service, education and manufacturing. By Heather Havenstein

FOR MANY PEOPLE, artificial intelligence evokes the menacing computer Hal from *2001: A Space Odyssey*, a machine so intelligent that it could function independently of humans.

Those inflated notions spawned by science fiction writers about the convergence of humans and machines tarnished the image of AI in the 1980s because AI was perceived as failing to live up to its potential.

Still, the field has quietly produced advanced applications such as Google Inc.'s search engine, systems that trade stocks and commodities without human intervention, and software that detects credit card fraud.

There's no precise definition of AI, but broadly, it's a field that attempts to provide machines with humanlike reasoning and language-processing capabilities.

Researchers now are emerging from what has been called an "AI winter" with renewed interest in the biology of the brain and research honed to practical applications in medicine, customer service, manufacturing, education and other areas.

Jeff Hawkins, founder of Palm Computing and chief technology officer at PalmOne Inc. in Milpitas, Calif., created a buzz in the AI world with his book *On Intelligence: How a New Understanding of the Brain Will Lead to Truly Intelligent Machines* (Times Books, 2004), which asserts that AI research should focus on the parts of the brain associated with intelligence.

"In the past, people thought of the brain as a computer, where I have some input, I write a program to process that, and then I spit it out, and the success is getting the correct output," Hawkins says. "In all these cases, AI kept failing, because brains are not computers; they are memory systems that make a model of the world."

Hawkins, who founded the Redwood Neuroscience Institute in Redwood, Calif., predicts that once researchers can infuse systems with language, memory and other skills housed in the neocortex, applications will emerge for areas such as drug discovery, robotics, computer vision and remote sensing — tasks that today are hard to automate by conventional techniques.

FUTURE WATCH

Fair Isaac Corp. in Minneapolis is automating business decision-making tasks such as approving bank loans and detecting credit card fraud. Robert Hecht-Nielsen, vice president of research and development at Fair Isaac, is building a cognitive system that can understand language and adapt through trial and error — similar to how a child learns to hit a baseball.

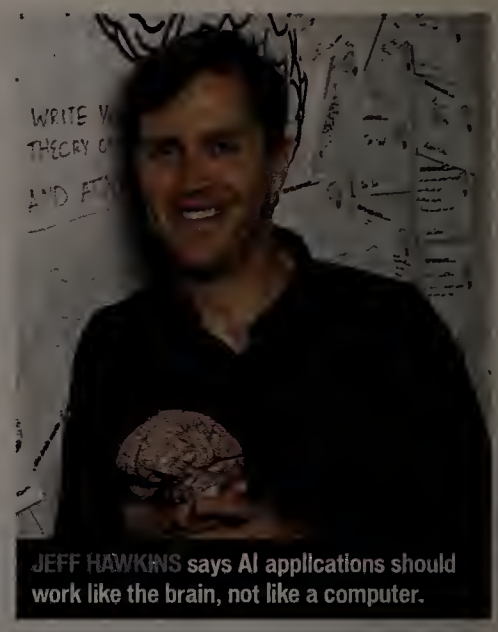
The system uses a cognition algorithm modeled on the cerebral cortex of the brain. Hecht-Nielsen's work is based on "confabulation," a mathematical theory that each individual instance of information processing in cognition involves drawing a conclusion based upon a set of assumed facts by applying available knowledge. For example, if a small animal waddles like a duck, quacks like a duck and flies like a duck, one can conclude that it's a duck.

Hecht-Nielsen's confabulation architecture is based on a new way of looking at human cognition: Everything in the mind is represented by lists of symbols that can be used to describe the attributes of an object.

After "reading" 8,000 encyclopedias and novels and accumulating billions of links between words for context, the confabulation architecture — which has no software or rules — can generate the end of a sentence that makes some sense after being given the first part of a sentence. Within 10 years, Hecht-Nielsen envisions that the system will work with decision-making software to boost customer service by conversing with customers to understand their needs.

The Intelligence Distribution Agent (IDA), developed for the U.S. Navy by the Institute for Intelligent Systems at the University of Memphis, helps assign sailors new jobs at the end of their tours of duty by negotiating with them via e-mail. According to Stan Franklin, co-director of the institute, IDA has a cognitive cycle that perceives language from an e-mail as a set of symbols and then makes sense of the symbols and chooses a response.

When an e-mail arrives, IDA pulls out relevant information like name, rank and statements of job preferences. It chooses the most relevant information based on episodic memory, or associations made from past interactions. The most relevant information is broadcast out to behavior "codelets" — executable software — that can perform tasks such as looking up something in a database or composing a message back to a sailor. Then a selection mechanism chooses a response to the e-mail.



JEFF HAWKINS says AI applications should work like the brain, not like a computer.

In the next five to 10 years, Franklin says, IDA could perform jobs such as negotiating with humans in unstructured English and making decisions by looking up data like company policies or client preferences in a database.

Franklin claims that he has been successful with each of his efforts to copy a human trait in a machine. "I don't have any feeling that there is some human capability that we won't be able to emulate," he says.

Hecht-Nielsen says AI won't end up producing the superhuman cyborg of Hollywood scripts but will spawn practical applications made from pieces of human intelligence, such as cognition and rehearsal learning, or learning by repetitive practice.

In any case, we probably wouldn't want to make machines that are too much like humans, he says, or we might end up with systems that are influenced by personal biases, just like many people are.

Instead, AI systems will handle tasks that humans aren't particularly good at today, like dependably answering tedious customer questions with an endless supply of patience.

"AI will mean ennoblement for the customer," says Hecht-Nielsen. "Someone will answer calls in a call center and spend as much time as the customer needs, and they will be polite and fun. It just won't be a person." 52249

CONFABULATION MACHINE

The black box houses a computer-implemented architecture for sentence continuation based upon the Hecht-Nielsen theory of cognition. Its prestored knowledge was obtained by linking symbols that are activated at the same time as 8,000 books of English text are streamed through it.

TRIAL 1

Three words are entered into the architecture without a previous sentence being provided. The architecture then uses its knowledge and a simple, fixed thought process to add some words, which are shown on the right.

I was very → I was very nervous about my ability...

TRIAL 2

A previous sentence (shown in yellow being entered into the top) is also provided. This [illegible] the architecture's output and [illegible] more "int[illegible]nt."

The quarterback fumbled the snap.

I was very → I was very upset with his team's ability...

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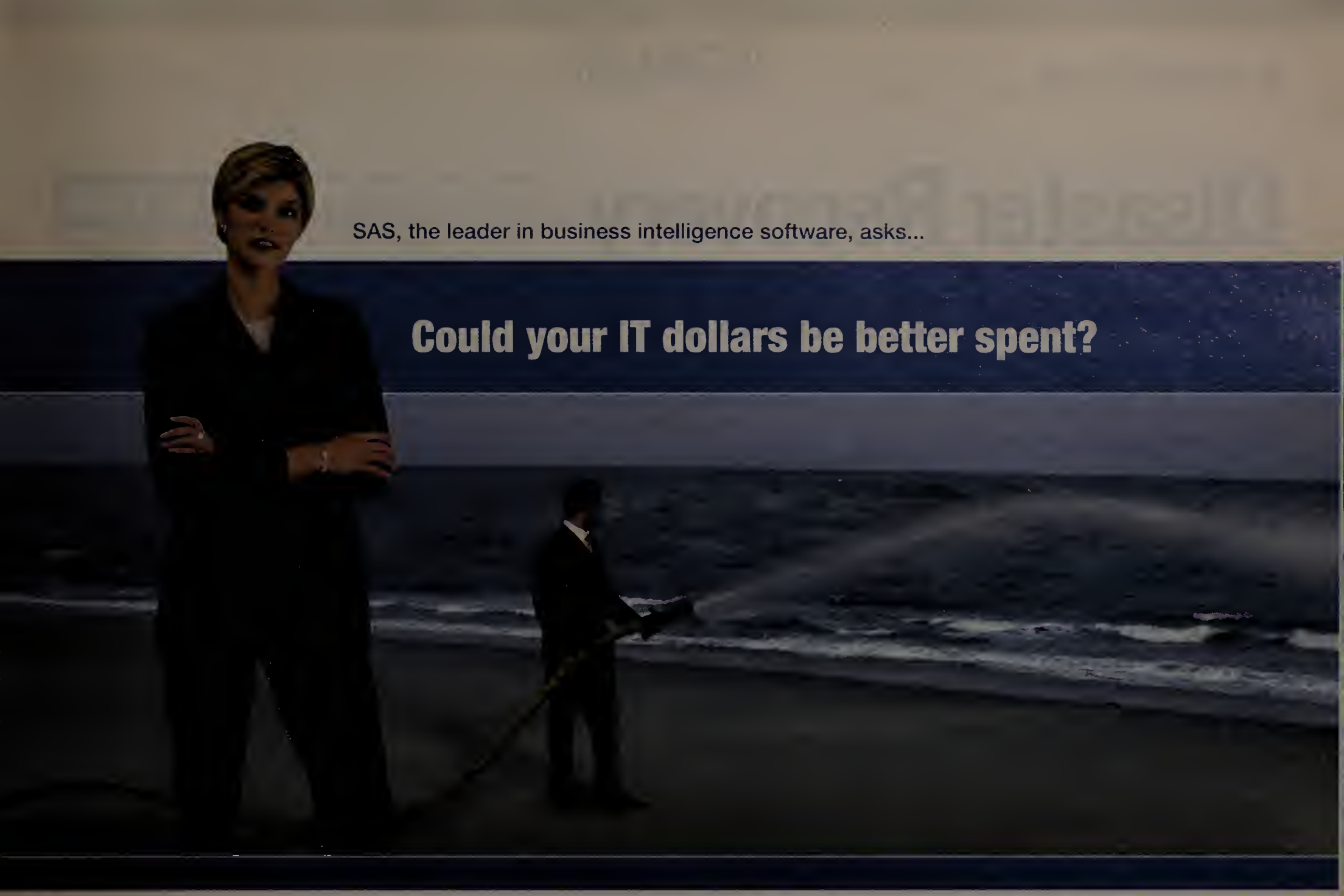

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Disaster Recovery Planned on the Fly

Our security manager has to come up with an overnight disaster recovery plan in case this is the year of the flood. By C.J. Kelly

FLOODING? It's been snowing. Why are we talking about flooding? My new boss had asked me to step into his office, closed the door and lowered his voice.

"The senior management team is concerned that we could experience some flooding when the snow melts. Can you check into this for me?"

I took a deep breath. I was having a hard enough time adjusting to record snowfall. I had had to learn how to put chains on my SUV (which I naively purchased sans four-wheel drive), I was continually cold, and all I could think about was how warm it must be in Florida. Given the icy chill in the air, I was having a hard time seeing a flood threat. Still, I had to respond. Can you spell *disaster recovery*?

It's part of the job of security professionals to formulate contingency and disaster recovery plans. But which comes first, the chicken or the egg? In this case, it's the egg. Normally, one would prepare a comprehensive contingency plan, which would include specific disaster recovery plans as critical subsets. But I was being asked for one subset immediately.

In order to draw up a flood disaster recovery plan, I needed to understand the flood risk for our various office locations in short order. How in the world does one go about doing that? I had no idea how to research weather conditions. I turned to Google, my best friend.

SECURITY MANAGER'S JOURNAL

Being new to the region, I had no memories to draw upon, and my research into the flood history of our office locations horrified me. I found pictures from about seven years earlier of two cities where we had offices half-submerged under water.

So the pattern was for a flood to hit every seven to 10 years. The next step was to understand what created the flood conditions. What lakes and rivers were nearby? What was the water level at that time? Was it unusually warm or wet? Were there global weather conditions that contributed to the flooding? With the news about the Indian Ocean tsunami fresh in my mind, I knew that Mother Nature was to be respected.

I was surprised at the number of resources I found online. The U.S. Geological Survey, for one, provides all kinds of useful "water" information. I learned that the major lakes and rivers in the area are monitored, and I was able to download the latest information on water levels and "stream flow" data. I found historical data that allowed me to compare what happened seven years ago to what was happening now. I also found that the National Weather Service provides not only current information on local, national and global weather patterns and conditions, but also 30-, 60- and 90-day outlooks.

I had no idea how to research weather conditions. I turned to Google, my best friend.

El Niño conditions have been confirmed, and particular weather patterns are expected as a result, some of which might directly affect our area. The National Oceanic and Atmospheric Administration has an entire Web site devoted to El Niño.

Deluge Denial

With my head buried in graphs, charts, statistical data and weather forecasts, I came to the conclusion that our current weather patterns are very similar to those of seven years ago. Surely, city and county agencies had prepared for a recurrence of this type of a disaster. I searched again on Google, looking for evidence that local governments are prepared. But although they had budgeted millions of dollars for improvements, it wasn't readily apparent that the improvements had been made.

I consulted flood zone maps available on the Federal Emergency Management Agency's Web site. I even discovered that I now live in a flood zone, in an area that was several feet under water seven years ago.

It took me two to three days to do all this and draft preliminary conclusions. I spent the next few days making site visits: taking notes on where telecommunications, networking and server equipment was located; surveying the area around each building; checking the type of construction; observing the locations of canals.

One facility of cement construction was on slightly elevated ground in a business park with canals winding through it. Another was a very old wooden building in a low-lying area very near one of the rivers that had previously flooded. When I got home that evening, I also noticed for the first time a canal out back.

Back in the office, I inspected floor plans and interviewed a couple of employees who had been through the last big flood. I also contacted the department responsible for facilities and personnel safety to see what their emergency evacuation plans were; there were none. I met with the chairman of the safety committee and stood stunned as I was told that it hadn't met in a year and had no documented plans. He even expressed his own dismay at the lack of progress. I walked back to my office and closed the door. I had to think.

In the end, this was the best immediate disaster recovery plan I could come up with: Should weather conditions change for the worse, I and an IT worker who doesn't live in a flood zone will take two large trucks to the branch location that's in the most danger and grab all the computer equipment, load it onto our trucks and drive it to his garage.

Meanwhile, I'm keeping an eye on the weather conditions, lake levels, stream-flow data and all that other wonderful stuff I now know so much about, and I'm writing a real contingency plan. If the floods come this year, at least we can save the equipment in one location. Next year, we'll be better prepared. For now, I'm working through each phase of the contingency plan and have the policy floating out there in the signature loop.

WHAT DO YOU THINK?

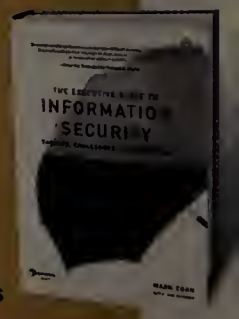
This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussion in our forum: **QuickLink a1590**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

■ ***The Executive Guide to Information Security***, **by Mark Egan, with Tim Mather (Addison-Wesley Professional, 2004).**



It's rare that I find a book I would recommend to senior management about technology, especially security technology. But Egan's book nicely balances helping executives understand infosec with showing them how to do something about it. Egan's "Ten Essential Components for a Successful Information Security Program" include establishing a cross-functional security governance board, implementing a continuous improvement program and separating the computing environment into zones. The book also contains useful forms for designing a program, as well as informative charts, graphs and statistics. This is a necessary read for executives who want to build a solid infosec program.

– C.J. Kelly

Sophos Looks to Expand Offerings

U.K. antivirus company Sophos PLC said it's licensing Agnitum Ltd.'s Outpost personal firewall technology for integration into its enterprise and small-business products by the end of this year. The move is part of Sophos' broader effort to transform itself from an antivirus company into an integrated endpoint security provider, said Gary Thomassen, head of product development at Sophos.

The Worm Turns

In the wake of the Forbot worm, the developers of the open-source relational database MySQL may modify the software, said Zack Urlocker, vice president of marketing at MySQL AB. New features could include automatic update tools that push software fixes to default installations.

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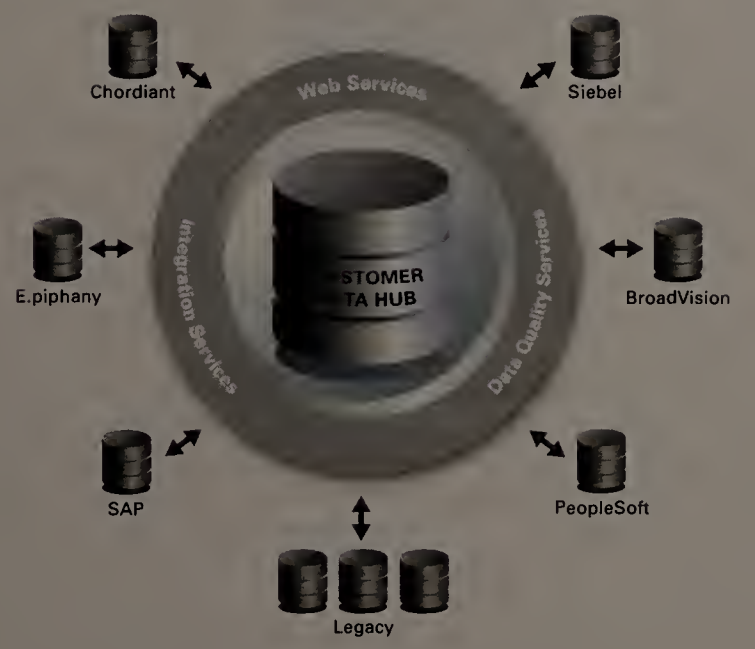

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BRIEFS

Canto Adds to Asset Management Tool

■ Canto Software Inc. in San Francisco has released Version 6.5 of its Cumulus digital asset management software. The release focuses on simplifying administration with enhanced authentication methods, including LDAP support and new tools for increased system control, according to Canto. Pricing starts at $69.95 for Cumulus Single User, $2,495 for Cumulus Archive Server Solution, $4,995 for Cumulus Publishing Server Solution and $33,000 for Cumulus Enterprise.

Blazent Upgrades Optimization Tool

■ Blazent Inc. has begun shipping Blazent 3.0, an upgrade to its IT analytic and optimization tool with new visualization capabilities. The software is designed to enable IT managers to visualize how and whether IT activities are supporting an organization's business objectives, according to the San Mateo, Calif.-based company. Blazent 3.0 runs on Microsoft Windows, Sun Solaris, IBM AIX, HP-UX, Red Hat Linux, SUSE Linux and Mac OS 9 and OS X. Pricing starts at $300,000, with high-end configurations costing several million dollars.

Retail Group's XML Schema Released

■ The Association for Retail Technology Standards, a division of the National Retail Federation, announced last week the release of XML schemas to help retailers maintain consistent and accurate data. The new item-maintenance schema can be used to create, update or delete item information held within store systems. The second version of the price schema, which complements the item-maintenance schema, adds the ability to download prices and price rules in support of special and promotional pricing. Version 1 was limited to price-lookup capabilities.

CURT A. MONASH

Milking Moore's Law

MOORE'S LAW has been going strong for decades. And for all that time, IT has kept sopping up the resulting compute power, on clients and servers alike. Not for nothing is it said, "Intel giveth and Microsoft taketh away."

CURT A. MONASH is a consultant in Acton, Mass. You can reach him at curtmonash@monash.com.

So will this situation continue indefinitely? In a word, yes. Demand for processing power won't be saturated for many years, though online transaction processing may actually be the one major exception to this trend. Growth in classic transactions is tied to real-world factors such as revenue, units sold or head count. Only rarely do these grow at Moore's Law speeds. Non-traditional types of transaction processing — such as Web site logging and, soon, RFID — give periodic boosts to overall transaction volumes, but their growth soon levels off.

But the analysis of that transaction data is surely on a much steeper curve. Today's corporations typically have BI systems that provide high volumes of canned, repetitive reporting but relatively low volumes of personalized information delivery. When every manager in the organization has a personalized dashboard and uses it for frequent drill-down analysis, analytical processing requirements will explode.

An even greater explosion in analytic processing could come in planning. Ideally, one would like to test various assumptions about the future more or less independently of one another. This can create a huge number of planning scenarios, limited only by the available computing power, which in turn may be limited only by the questions of what the economic value of superior planning really is.

Another area of near-infinite potential growth in processing is predictive analytics. There's no real limit — except imagination — to the amount of data mining that can be attempted, at least for enterprises with large consumer markets. And when mining uncovers a useful nugget, it may be turned into an in-line model used in real-time customer interactions, potentially another huge use of computing power.

The most significant growth in server-side processing requirements, however, may come in a different area altogether: document information retrieval. Enterprise effectiveness would be greatly improved if computers could extract information directly from e-mail archives or even from a corpus of well-edited articles.

In principle, one could teach a computer to apply all the document understanding techniques humans use, only faster. But in practice, that will never happen, because it's too complex a programming challenge. Instead, the eventual solutions will be similar in nature to championship-level chess algorithms — they will apply a small subset of the heuristics humans use, which will narrow the problem enough for brute-force calculation to deliver an intelligent result. In any case, large improvements in computer price/performance are needed before intelligent information retrieval will be practical.

Another AI-like sink for processing power will lie in advanced user interfaces. Getting a computer to talk interactively with a human is analogous to, and even overlaps with, the information-retrieval problem. Multimedia interfaces, especially personalized ones, also require large amounts of computing power, which is obvious to anybody who eagerly awaits future generations of computer games.

While these examples suffice to prove that IT can usefully absorb vastly more processing power than it requires today, there will be further applications for that power as well. Security is an arms race; you can't defeat the hackers unless you have enough processing power on your side. Scientific professionals also have enormous needs for computer power, especially as bioinformatic research technologies get adapted for patient-by-patient clinical use. So we'd better all hope that Moore's Law remains true for a long time to come.

Absorbing all this processing power cost-effectively will probably involve a move to grid computing, and there could be a slow, messy transition while grid infrastructures become wholly robust. I have four practical suggestions to ease the pain of transition.

1. Gain experience soon. Use grid architecture for at least one major near-term hardware upgrade. The best target is probably in the area of analytics.

2. Similarly, gain experience with time-sharing-style outsourcing, which may eventually be a good alternative to a full infrastructure makeover. E-mail or other highly distributed apps may be the best bet.

3. Use appliances wherever they make sense, which probably includes most of networking, security and communications. Cheap hardware and cheap application management may outweigh vendor fragmentation more often than you expect.

4. At large organizations, invest in a knowledge management system. Its cost can be justified by its usefulness in finding internal expertise on almost any subject. And working on knowledge management will provide experience with difficult document-retrieval issues. **52468**

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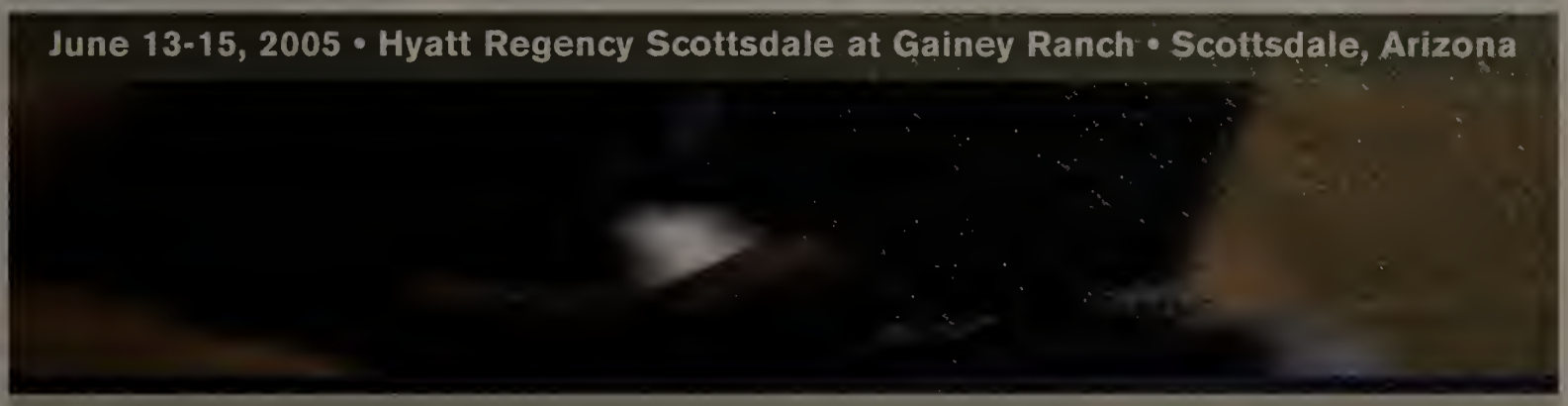

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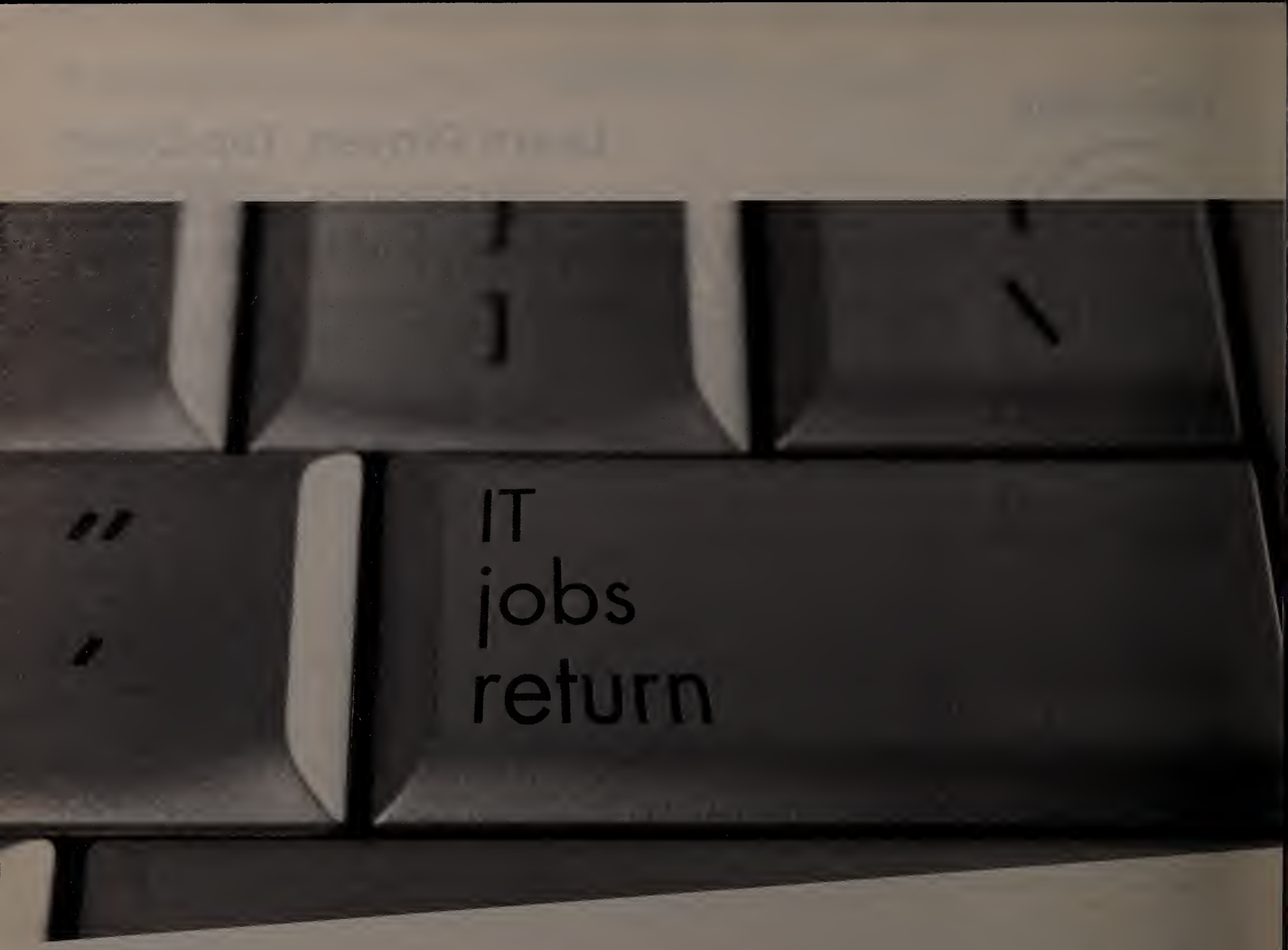

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MANAGEMENT

The Chargeback Conundrum

Advocates say IT accounting systems help manage costs and demand, but opponents argue that they poison IT's image in the business. **Page 38**

Career Watch

Employed workers of all types plan to step up their job searches once the economy improves. Also, Silicon Valley in the doldrums; the top 10 metro areas for IT job creation; and getting rich at work. **Page 41**

OPINION

Enterprise Agreements? Not So Fast!

Sure, corporatewide contracts often save you money, but be careful, warns Bart Perkins. In some circumstances, they can backfire. **Page 42**

JOSEPH MILLS

Vanguard Car Rental's realignment of IT and outsourcing with Perot was led by (from left) WILLIAM LOBECK, TYLER BEST and EUGENE PIZINGER.

MECHANICS OF A MERGER

Vanguard Car Rental's IT operations were out of alignment and heading for a ditch until its new CIO set a better course.

BY PATRICK THIBODEAU

IF IT'S BROKE, CIO Tyler Best likes to fix it, and in July 2003, he found himself put to the test.

Best was hired to take over IT operations at ANC Rental Corp., a failing company that operated two major car-rental brands, National Rent A Car and Alamo Rent A Car LLC.

At the time, Best was working at New York-based Cerberus Capital Management LP, a firm that specializes in saving distressed companies. Cerberus was acquiring ANC's assets and creating a new corporation, Vanguard Car Rental USA Inc., to run the car-rental brands. Although Best would become CIO, he was technically a consultant to ANC until the acquisition was complete. But he was a consultant with the power to hire and fire.

Vanguard faced classic merger challenges. National and Alamo ran separate IT systems; there was duplication, and costs were excessive. Internal battles over IT direction had stymied efforts to standardize on one system. Although 99% of the IT operations of both brands were outsourced to Perot Systems Corp., the companies still had a combined in-house IT staff of 85.

For Best's boss, newly appointed CEO William Lobeck, cutting IT costs was critical.

Three days after Best showed up for his first

VANGUARD CAR RENTAL USA INC.

LOCATION: Tulsa, Okla.

BUSINESS: Privately held company formed from assets of failed parent company of rental-car brands Alamo and National. Bought for $2.4 billion in 2003, it operates at more than 4,000 locations.

IT STAFF: Eight in-house, but employees of outsourcer Perot Systems Corp. are considered to be staffers.

day of work at Vanguard's Fort Lauderdale, Fla., headquarters, he fired all 85 IT people. Perot picked up 21 of them and took responsibility for day-to-day operations. Best and a small IT team would oversee IT and Perot.

The business side would also see big cuts. Lobeck laid off 34 of the 100 most highly compensated employees at Vanguard. He replaced them initially with five hand-picked people selected through personal connections. "None of the team was built with headhunters," says Lobeck.

Best also recruited his new team carefully, relying on referrals rather than headhunters. For instance, his vice president of IT, Craig Bonza, is a trusted former co-worker.

REALIGNED

Best knew that he needed to establish a tight relationship with Perot. "You and I will almost have to become the same person," he told Eugene Pizinger, Perot's top account representative at Vanguard.

Best also knew that Vanguard and Perot would have to think and act like the same company. He started erasing the lines between them with a highly visible symbol: Vanguard's business cards don't differentiate between Vanguard and Perot personnel.

Next, Best had to clarify that Alamo and National had "one IT practice." The big project that would be critical to reducing costs and building a new future was creating one IT system for both brands.

Alamo and National had come together through mergers during the mid-1990s under previous corporate parents, but they had continued to run IT separately. Alamo operated on an IBM mainframe, and National used a Unix client/server system running Perot's Odyssey ERP system.

Mike McNall, director of application services at Vanguard and a Perot employee, recalls the ongoing battles between IT groups at Alamo and National over which system should become the standard.

While McNall preferred the Odyssey ERP system, he saw the choice of a system as less important than getting complete support for one IT direction, and that included support from the business units.

"If we didn't have the backing of the business owners and the users, no matter what we built, it wouldn't be accepted," he says.

The new leadership team quickly agreed to standardize on Odyssey because they saw it as the more scalable and flexible architecture.

> **"If we didn't have the backing of the business . . . no matter what we built, it wouldn't be accepted."**
>
> **MIKE McNALL,** DIRECTOR OF APPLICATION SERVICES

Then Best pulled 16 vice presidents out of various Alamo and National business units to be part of the team that would redesign the Odyssey ERP system to support both brands. "You are going to tell us how this system is going to operate," he told them.

With that message, Best says, "we turned it from an IT project into a company project."

They rigorously mapped every step needed to move Alamo's customer data to Odyssey and switch over systems. "Everything that had to happen was documented weeks in advance," says Best, and those plans were shared with everyone on the team. "I'm very, very rigid on making sure we have the right communication," he says.

The ERP system handles sales, marketing, reservation rental, billing and fleet accounting, among other things. Data from the Alamo system had to be converted into the new system, and McNall's job was to make certain that Odyssey met the needs of both brands.

He received a multitude of requirements from the various business units. After carefully evaluating what was good for both the client and customer and what could be accomplished in a nine-month time frame, McNall determined what would go into the first version of the system.

McNall also coordinated with 80 external business partners, such as airlines, which needed to conduct network and application tests to ensure that their systems were synchronized with Vanguard's changes.

Best interviewed hardware vendors and decided on Hewlett-Packard Co., primarily because he found it most committed to customer service and hungriest for the business. Vanguard's main servers today are two high-end Superdomes with PA-RISC chips running HP-UX.

The switch over from the IBM mainframe to the HP system was completed without a hitch in August. The transition worked because it had the backing of all the top executives, says Perot's Pizinger. "That was the biggest reason we were successful," he says.

DOWN THE ROAD

It's been a year and a half since Best assembled his team. Today, Vanguard operates on one IT system. In Vanguard's new corporate offices in Tulsa, Okla., Best and his top IT managers — from both Perot and Vanguard — engage in easy banter and socialize after work. Best knows the names of his coworkers' children.

They may disagree from time to time, but they're committed to leading Vanguard in one IT direction.

Since the acquisition, IT has become the second-largest area for savings at Vanguard, responsible for as much as 35% of total cost reductions. (The greatest savings came from refinancing; a head-count reduction and a move from Fort Lauderdale to Tulsa last year accounted for the third-highest cost reductions.)

Ultimately, the systems consolidations, staff reductions and other changes reduced IT spending by about 50%.

The size of the IT savings doesn't surprise Thomas Pettibone, a founding partner of Reston, Va.-based Transition Partners Co., which provides senior IT support. Pettibone says companies that merge similar lines of businesses can achieve significant savings. "The more compatibility, the greater the cost reduction," he says.

With the systems consolidation complete, Vanguard is focusing on technology to improve customer service and its competitive edge. The trend in the industry is to develop car-rental systems that improve asset management and increase the number of car and feature choices for customers while reducing human interaction, particularly in business travel.

Vanguard officials won't disclose all the ideas they're considering, but they're clearly interested in asset management systems that can automatically provide updates on things like the amount of gas in the tank and maintenance needs when a vehicle is checked in and out. They also want to integrate fleet planning with long-range weather forecasting. If heavy snow is expected near Colorado ski resorts, for instance, cars could be moved in advance to handle increases in demand.

These new challenges appeal to Best, who says his experience at Vanguard has been professionally satisfying. "I like fixing broken things," he says. "That's the truth."

The Vanguard business team knows the value of IT. Technology is "the only thing that will allow us to improve our level of customer service in an [airport] environment which is generally not at all traveler-friendly," says Lobeck. "The team that is going to win this battle is going to be technology-driven." **52257**

STRATEGIC SOURCING

Vanguard when it says technology is critical. But the Forrester Research Inc. analyst has concerns about its strategy of outsourcing most of IT. "They dilute the credibility of that statement if they are doing a lot of outsourcing," he says.

Harteveldt's comment reflects the traditional theory that smart companies may outsource peripheral functions but should keep strategic functions in-house. Since IT is clearly strategic to Vanguard, it shouldn't be outsourced, according to this point of view.

But not everyone agrees. "That's not a particularly useful framework anymore," says Mark Gottfredson, a partner at Bain & Co. In this month's *Harvard Business Review*, Gottfredson argues that today, nearly every function is a jump ball (see page 40). "Even though it's strategic, many times other people can do the job better and more cheaply than you're doing it," he says.

"Companies should look at every single activity in the entire value chain and ask, 'Are we the best in the world at this?' " he says, and if the answer is no, then it should be a candidate for outsourcing.

Either way, if Vanguard is to succeed, much will depend on how well it works with its outsourcer, and Harteveldt sees the company's unified business cards as a good symbol. "[It] does emphasize in a very creative way how they are all members of the same team," he says. "It's a novel and very intelligent approach."

– Patrick Thibodeau

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THE Chargeback CONUNDRUM

Chargeback systems can help you manage IT costs, but some say the price is too high.

By Matt Hamblen

KATY LEMAY/AGOODSON.COM

LAUNCHING A CHARGEBACK SYSTEM to recover IT costs may sound like a simple matter of putting together an accounting spreadsheet. Depending on the organization, however, IT chargeback plans are often complex, and they involve much more than simple accounting. Chargeback gets right to the guts of corporate politics and even raises questions about the proper role for IT in an organization. While chargeback has its proponents, many IT leaders see it as a third rail — not to be touched if you can avoid it.

"I have never heard a good reason to do chargeback," says former Ace Hardware Corp. CIO Paul Ingevaldson, who retired from the Oak Brook, Ill.-based company in December. He believes chargeback programs degrade the value of the IT shop. Instituting IT chargeback "means that the company thinks of IT as a utility instead of a strategic part of the business," Ingevaldson says. And designating IT a "utility" raises questions about its relevance, which is already a sensitive issue, he adds.

If a chargeback plan is implemented in a corporation where top management is not IT-savvy, then the divisions with the most money also win the most IT resources, while an emerging unit loses out, Ingevaldson says. He thinks the best alternative is a system where all the top management is involved in the IT oversight process and an IT steering committee makes strategic decisions.

Jeremy Lehman, senior vice president of technology at Thomson Financial in New York, agrees. "I'm not a big fan of chargeback plans," he says. "They introduce complexity and rely on subjective judgments about allocations. They turn the whole dynamic around IT into cutting costs instead of viewing IT as a revenue maker."

SURVIVING CHARGEBACK

How to establish a chargeback system and live to tell the tale:
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Opposing View

But Chuck Darville says chargeback helps him run IT as a business. "We look to see if someone can do IT better, faster and cheaper," says Darville, technology planning director at Southern Co., a consortium of five power utilities in Atlanta.

Darville argues that companies that view IT as a cost center don't need chargeback. They can simply total all IT costs and divide by the number of workers, passing on that cost to each division. But that wouldn't provide the incentive for cost management in IT that chargeback provides, he says.

Southern, which has 26,000 employees, has set a goal of billing those internal customers whose decisions affect IT costs, "so they can see the full impact of their decision," Darville says.

That's one of the chief benefits of chargeback: helping IT users understand that speeds, feeds and applications actually tally up.

Chargeback "allows you to get out of the 'IT is free' world," notes Barbara Gomolski, an analyst at Gartner Inc. and a *Computerworld* columnist. "If you don't have it, there's an endless demand and [division leaders] always want more of IT."

Southern has had an IT chargeback system since 1997, using a general ledger program as well as a number of applications to track IT assets. The best IT chargeback plans monitor two forms of costs, Darville says. One is for "demand" products such as PCs and printers. Each PC's total life-cycle cost of ownership is calculated upfront and a monthly charge is assessed to the appropriate department, Darville explains.

The other type of cost is for "allocated" products and services, such as cybersecurity, file and print servers, and the data network. This is a kind of corporate tax that is charged based on head count, Darville says. Fixed costs for areas such as mainframe usage are counted among allocated services.

Market Metrics

Southern's approach is driven largely by IT's desire to offer market-competitive products and services. IT managers benchmark products against those of third-party vendors to "ensure that our internal IT offerings are the best deal for the company," Darville says.

For example, the cost and quality of a network service performed internally would be compared with outsourced services available from providers such as AT&T Corp. or Sprint Corp., he says.

Both Darville and Gomolski recognize that there can be disadvantages to chargeback, including the need to hire staff to manage the process. The more detailed the chargeback plans, the more support staff required, Darville notes. Southern, for example, devotes 20 workers to managing its chargeback system.

Despite the drawbacks, Darville says the system enables him to deliver the best IT service, and over time, internal customers have grown to understand and accept chargeback. "We do get a lot of, 'What does this mean?' " he says, but meetings to review IT costs are friendly.

Even so, those who favor chargeback and those who oppose it agree on one thing: The plans can be lightning rods for those who implement them. "Chargeback is a political minefield," Gomolski says. "And if you are the one to roll it out, it won't make you too popular." **52179**

GAS

RICHARD HOFFMAN, CIO at Hyundai Motor America in Fountain Valley, Calif., implemented IT chargeback systems while at two prior employers and found that it succeeded in one case but not in the other.

At diesel engine manufacturer Cummins Inc. in Columbus, Ind., where he worked from 1998 to 2001, chargeback made sense because IT was run as a true shared-service organization that served distinct multiple profit centers, Hoffman says.

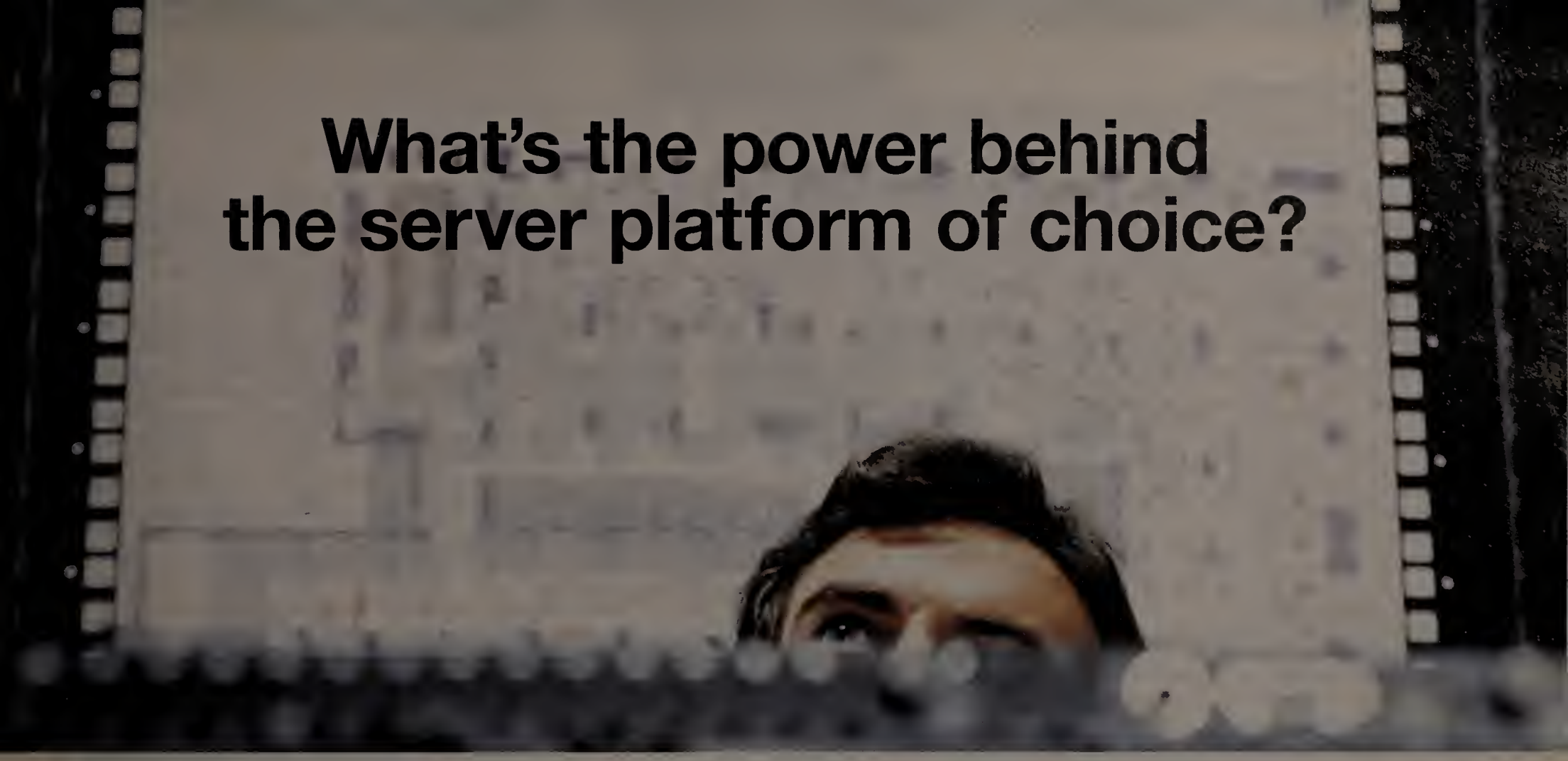
But at Yamaha Motor Corp. U.S.A in Cypress, Calif., he and others implemented and used a chargeback system from 1989 to 1998 that failed to solve underlying cost problems. "I cannot say it had the desired effect," he says, because "we were trying to solve a problem by fixing a symptom."

The two experiences have led him to believe that IT shouldn't implement direct chargeback "unless it's dictated by the business." Instead, he promotes an "IT allocations" approach, conducted from the highest level.

"I truly believed in IT chargebacks at one time, but found out it was a really bad idea," Hoffman says. "Showing value with direct chargebacks is the equivalent of throwing gasoline on a fire. It opens up far more issues than it resolves, it takes a lot of energy, and it keeps the subject of 'IT is expensive' right in everyone's face."

– Matt Hamblen

What's the power behind the server platform of choice?



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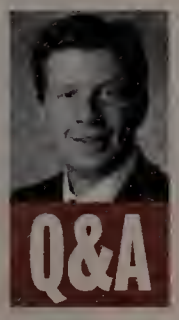


KEEP THE CORE? NO MORE!

A new view holds that nearly every function in your business – strategic or not – should be a candidate for outsourcing.

Keep the core: That has been the conventional wisdom about outsourcing, but it's being challenged by **Mark Gottfredson** *and his co-authors in this month's* Harvard Business Review. *The Bain & Co. partner told Kathleen Melymuka that in the new global economy, when it comes to outsourcing, virtually nothing is sacred.*

You say that sourcing, which was always tactical, needs to become a core strategic function. Why now? The reason it's so important now is that there is a confluence of events that makes it possible for you to literally be able to redefine your business in terms of whether you do things or have them done by someone else or more cheaply somewhere else. A population 10 times the size of the U.S. has come on stream in the last few years, and they have an average wage advantage of 85% to 95% versus us.

Also, a technological revolution has made it possible to do many things that used to be done manually over the Internet or a telecom pipe as quickly and cheaply around world as next door. Finally, there's a trend where things that used to be functions of companies are becoming industries, and whole companies are focusing on functions.

You also challenge the conventional wisdom that strategic capabilities should be kept in-house. Explain. The traditional view has been to think about what's core and what's noncore and consider outsourcing the noncore. That's not a particularly useful framework anymore. Think of customer service and the call center: What could be more strategic than your interface with customers? Yet those customer-interface skills are not particularly proprietary across industries. The way you respond to customers is common for any number of companies. So even though it's strategic, many times other people can do the job better and more cheaply than you're doing it.

If "keep the core" is out, is there a new rule of thumb? A more robust framework is to keep functions that are highly proprietary and not common in the industry in-house. Anything not proprietary and common in the industry or across the industry is a candidate to see if anyone can do it better.

And that's what you call "capability sourcing." Yes. We believe that companies should look at every single activity in the entire value chain and ask, "Are we the best in the world at this?" If not, there are three options: Invest to become the best, outsource to someone who is best, or move it to a shore where it can be done much more cheaply and at a high-quality level — and either outsource it or own it, but do it offshore. Look at every capability in the value chain, and for every one, you want to be sourcing from the right source on the right shore.

As you improve these critical capabilities through outsourcing, how do you stay in the manager's seat and not give up control? It's common to say, "I want control over that." But there are two kinds of control: ownership control and contractual control. How you negotiate the contract when you're doing the outsourcing is important. If you write good contracts, contractual control can be greater than ownership control.

For example, your IT department is getting things to you late. What do you do? You own and control it, but what you usually do is provide feedback, bully them a bit to set new deadlines, and when they don't meet them, you get exasperated and fire people. Then you spend time hiring new people and you may get the same result. How much did you control the outcome? Not much. If you have a very carefully written contract for a service-level agreement, and if it's not met, there's an immediate financial penalty, so they'll do all they can to make sure you're satisfied. You actually have more control.

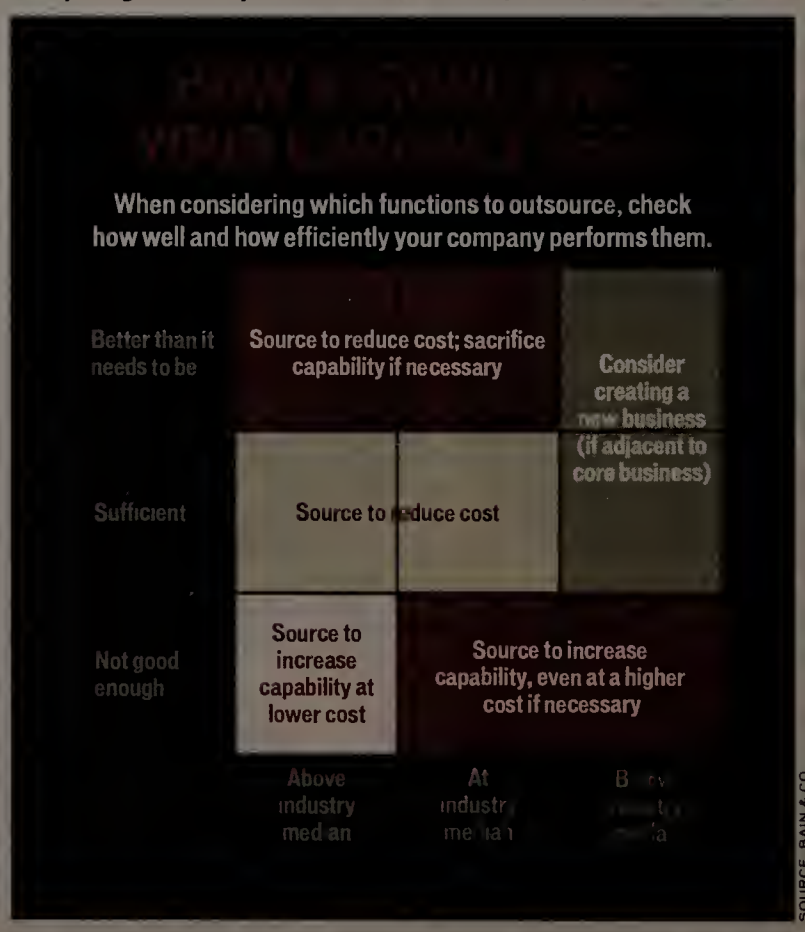
To move sourcing from tactical to strategic, you say you have to identify the "core of the core." What's that? The core of the core is the set of activities for which you are the absolute best. If you ask, "How proprietary is it, and how common is it?" the core of core is both proprietary and uncommon, and you are very, very good at it. Low cost, high quality, proprietary and not common — that's core of core. In fact, you could actually think about selling that capability to others; it could be a business opportunity for you.

Once you know what you have to keep, do you outsource the rest? You consider outsourcing the rest, but there may be reasons why you can't immediately or wouldn't want to. If you're as low-cost as the rest of world, it may not be a high priority to take all the steps and risks to outsource. Also, you may have labor issues or other contractual constraints that make it difficult in the short term. All the factors have to be critically evaluated. But the process of looking at it gives you a sense of how much you're leaving on the table, and that may affect your longer-term plans.

How does the issue of proximity affect these decisions? There are many ways proximity matters. For example, if you were outsourcing manufacturing capabilities, sometimes it makes sense to go to a low-cost country and sometimes not. Logistics costs could outweigh lower labor costs. Some things have to be done at the location. For example, in retail you can't outsource cashiers. There's a series of things to think about whether it's feasible or possible to move offshore. But that doesn't mean you can't outsource.

What is "dynamic sourcing," and how does it relate to all of the above? It's a capability. You need to develop the capability for managing the increased numbers and spectrum of vendors you have to deal with. You need a process to get benefits over time. If you contract at a certain price for seven years, you'll almost certainly not optimize because you didn't take into account costs coming down over time. You need to account for changes in the marketplace and to develop processes internally to manage that. **52204**

This is the latest in a series of monthly discussions with Harvard Business Review authors on topics of interest to IT managers.



Career Watch

Tony Lee

Q&A

TITLE: Editor in chief and general manager

COMPANY: CareerJournal.com, an online career site for executives, managers and other professionals that draws upon the editorial resources of *The Wall Street Journal*

Get ready for the next round of job-hopping. As the economy improves, workers who have had to contend with longer hours and flat pay over the past few years are getting ready to jump ship, says Tony Lee. According to a joint study that was released by CareerJournal.com and the Society for Human Resource Management in late November, nearly half (47%) of the 506 employees surveyed said that they're very likely to step up their job searches once the economy and job market improve. That's causing HR managers to fret about finding people with the right skills to fill positions in 2005, says Lee.

Computerworld's Thomas Hoffman spoke to Lee recently about the IT job market.

What percentage of the 75,000 jobs in the CareerJournal.com database are IT-related? Between 15% and 20%.

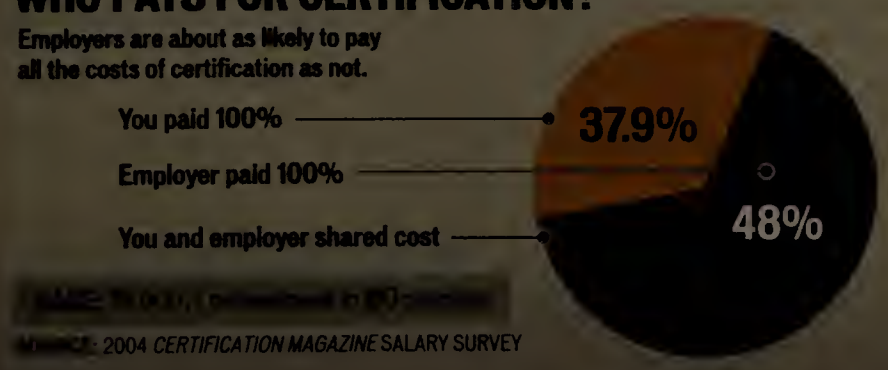
What's the state of IT hiring? One of the areas I hear about frequently is the demand for IT security specialists, whether it's in financial services, telecommunications or other industries. Other positions that are growing in demand are Web-based programmers and developers, especially for companies that have had a basic Web presence that now want to set up and grow e-commerce systems. Generally speaking, there's a continual improvement in the entire IT jobs space.

I may sound like a broken record, but the folks who have been doing the same jobs for the past four or five years with the same technologies and who haven't done anything to update their skills are going to have trouble finding jobs. Those that are updating their skills are having more success. This year's crop of master's graduates in computer science and other related fields are getting multiple job offers.

Are you seeing strength in full-time IT job postings? Or are the bulk of the jobs being posted for temporary or contract positions in IT? There are probably more full-time and fewer contract positions being posted right now.

WHO PAYS FOR CERTIFICATION?

Employers are about as likely to pay all the costs of certification as not.



SOURCE: 2004 *CERTIFICATION MAGAZINE* SALARY SURVEY

Wither Silicon Valley?

THAT'S NOT A TYPO in the headline. It's the question that comes to mind after taking a look at the 2004 Index of Silicon Valley, put out by Joint Venture: Silicon Valley Network in San Jose.

So is the Valley withering? In some respects it is, but in others it remains one of the most important economic regions of the nation. The Valley lost about 5% of its jobs between the second quarter of 2002 and the second quarter of 2003, but that's an improvement from the previous 12-month period, when 10% of jobs disappeared. And a disproportionate number of those jobs were in the region's hardware and software sectors. Meanwhile, out-migration has slowed the growth of the Valley's population of roughly 2.4 million to a crawl (up just 2,700 in 2002, according to the report). And average pay is down.

What's looking good about the area? Compared with the rest of the nation, Silicon Valley still has a high proportion of employment in high-skill, high-paying occupations. Venture capital is on the rise again. And some living costs are down from years past, though that and the region's reduced traffic congestion aren't generally considered signs of a robust economy.

All in all, however, the Valley might be said to be returning to a more normal level after the heights of the dot-com boom and the depths of the dot-com bust.

The highly readable report is available for download at *www.jointventure.org*.

— Jamie Eckle

THE JOB LOCATION SHUFFLE

NIMBLECAT, which is in the business of matching the right person with the right job, does a monthly report on software and IT job creation based on an analysis of openings posted to major job boards. Its December listing of top U.S. metropolitan areas for job creation has no really surprising entrants in the top 10; what's of interest is the order. The nation's capital moved to the top of the list, while San Jose, in the heart of beleaguered Silicon Valley, dropped from No. 1 in November to No. 3. In fact, all of California added 3% fewer jobs in December than in November.

TOP U.S. METRO AREAS FOR IT JOB CREATION IN DECEMBER

1. Washington
2. Long Beach, Calif.
3. San Jose
4. New York
5. Chicago
6. Boston
7. Seattle
8. San Francisco
9. Oakland, Calif.
10. Atlanta

SOURCE: NIMBLECAT, FREMONT, CALIF.

Getting Rich on the Job

IT HAPPENS, and not just to the Ellisons and Trumps of the world. *The Wall Street Journal* reported that Sprint Corp. has adopted a cash-incentive program that could result in payments of about $1 million to a few of its top executives. The idea is to retain the services of 11 top execs during the merger process with Nextel Communications Inc. But those are division presidents and the like.

What about the average code jockey? Let Shuji Nakamura be your guide. According to *The New York Times*, Nakamura, now a professor at the University of California, Santa Barbara, will receive 840 million yen ($8.1 million U.S.) from his former employer, Nichia Corp. in Japan, for inventing blue-light-emitting diodes. But is he happy? According to *Nikkei News*, Nakamura, who had been awarded almost $200 million by a lower court last year, wasn't satisfied with the lesser amount awarded him following Nichia's appeal but accepted it on the advice of his lawyer. **52235**

EXEC TRACK

Jo-Ann Stores Taps New CIO

Jo-Ann Stores Inc., a fabric and craft retailer based in Hudson, Ohio, has appointed GERTRUDE G. VAN HORN as senior vice president and CIO. Prior to joining Jo-Ann Stores, Van Horn served as vice president of global information delivery systems at Office Depot Inc. She has also held senior IT positions at Limited Brands Inc., American Express Co. and J.P. Morgan & Co.

Luu Is Named CTO at Entheos

TIMOTHY N. LUU has joined Entheos Technologies Inc. in Vancouver, British Columbia, as chief technology officer. He will also sit on the board of directors of the company, which provides outsourced e-mail services for small to midsize firms. Prior to joining Entheos, Luu launched Applied Technology Professionals Ltd., which provides custom integration of accounting and proprietary applications.

SiVault Announces New IT Roles

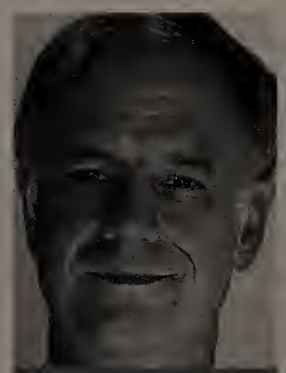
SiVault Systems Inc. has appointed RUSSEL DAVIS as general manager and STEVE POLLINI as CIO. As general manager, Davis, who will continue to serve as CTO, will also be responsible for the San Jose-based company's daily operations. He joined SiVault from Communication Intelligence Corp., where he was vice president of product development and support and deputy general manager of CIC China.

Pollini has been SiVault's vice president of engineering and operations. As CIO, he'll be responsible for global infrastructure, product customization, delivery and support. He was previously vice president of engineering and operations at Qiva Inc. and held senior technical and managerial positions at United Parcel Service Inc., General DataComm Industries Inc. and Tektronix Inc.

BART PERKINS

Enterprise Agreements? Not So Fast!

ENTERPRISE AGREEMENTS consolidate contracts with a single vendor across the corporation to reduce overall costs and provide consistent service. Seems like a good idea, but many enterprise agreements are fairly inflexible and may not meet the needs of every business unit. Under special circumstances, multiple contracts or creative solutions are more effective than standard enterprise agreements. Consider the following situations:



BART PERKINS is licensing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. He was previously CIO at Tricon Global Restaurants Inc. and Dole Food Co. Contact him at BartPerkins@LeveragePartners.com.

International anomalies. Global enterprise agreements may be tempting, but their cost-effectiveness can vary significantly for units operating outside your own country. One client signed a global agreement to purchase PCs. While the supplier's PC prices in most industrialized countries decreased, they increased in parts of Eastern Europe and Asia. For example, the local manufacturer that the business unit in the Czech Republic had been using was 20% less expensive than the new Dell enterprise agreement. The increased costs from the enterprise agreement would have caused the struggling Czech division to lose money and risk being shut down.

When considering an enterprise agreement, evaluate its scope and impact globally, and exclude countries where costs would rise. As an alternative, use some of the overall savings to subsidize countries facing cost increases.

Global agreements can also affect service levels adversely, because when products are centrally purchased, local representatives may not receive incentives to provide high-quality service. At one client where Asian divisions purchased their own servers through local dealers, a new enterprise agreement was signed to reduce acquisition costs. But since the local dealers received no sales credit, service levels plummeted. When the contract was renegotiated to give local dealers partial credit, service returned to normal.

Architectural migration. Enterprise agreements sometimes require complex technology changes. If you plan to change architectural direction, be wary of anyone pushing for enterprise agreements before your architecture is stabilized. That way, you'll avoid the expense and upheaval of unnecessary conversions.

Exceptional existing contracts. One division may have an existing contract that is better than the proposed enterprise agreement. This can occur when a division has a more mature supplier management program or when a vendor grants cost concessions during unusual circumstances (for example, during initial product launches or end-of-year sales, or when a vendor desperately wants a specific company's business). The overall corporate savings may not warrant the political cost of a division's unhappiness over imposed price increases.

Research existing contracts before signing an enterprise agreement, and negotiate to exclude divisions as appropriate. But maintain multiple contracts only as long as significant benefits exist.

Franchisees (or licensees). Centralized buying is often touted as a benefit to franchisees. It works well for tangible goods that can be easily tracked and repossessed, but software presents a much more difficult situation.

A vendor wants guarantees that franchisees will accurately report seat counts and pay their bills, but the franchiser doesn't want to be responsible for those things. Such arrangements would alter the arm's-length relationship between franchisee and franchiser.

A buying cooperative is often a better solution. The cooperative purchases technology for its members (including small costs for administration and to cover minimal bad debts). This relationship enables the franchiser and franchisee to continue functioning as totally separate entities while providing the desired accountability to the vendor.

Spin-offs. Enterprise agreements are rarely designed to handle spin-offs to the customer's advantage. Normally, the newly created company ("NewCo") has to acquire new products and licenses, usually at significantly increased prices.

If NewCo is purchased by a company holding contracts with the same vendors, its needs will be easily provided by the acquiring company.

But if NewCo is spun off as a standalone company, contract negotiations can become a major headache and expense. (Your negotiating position is significantly compromised when you are already using the product.)

Moreover, losing NewCo may also raise unit costs for the divesting company.

If you are anticipating a spin-off, adapt contracts accordingly. For example, you could negotiate that both companies will continue to pay current seat costs for a specified number of years after the divestiture. Alternatively, consider using two separate contracts to minimize financial impact.

Enterprise agreements require significant time, effort and money to negotiate and implement, so don't pursue them blindly. Research and evaluate the effectiveness of each contract and use enterprise agreements only where beneficial. Leverage your buying power by tailoring creative solutions for special situations. **52190**

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Advertising Supplement

IT Careers in Healthcare

While investment in information technology is picking up across most sectors, none is experiencing growth at the spiraling rate of healthcare IT. With a combination of federal initiatives, demands for cost efficiency and ever-increasing patient loads with increasingly complex illnesses, the healthcare industry is ripe for technology solutions that range from direct patient care to administering healthcare plans and providing accessibility across the spectrum of healthcare providers.

More than 19,000 participants are expected this week at the annual Health Information Management Systems Society meeting. Keynote speakers include Sun's Scott McNealy, Cisco's John Chambers and David Brailer, the senior-most government official on eHealth. H. Stephen Lieber president/CEO of HIMSS, says topics will include a national health information infrastructure and interoperability among providers.

Underlying the discussion is the more than $40 billion in IT investment the industry will make this year.

According to Sheldon Dorenfest, CEO of Dorenfest Group and director of the Dorenfest Institute at HIMSS, key to this year's opportunities are transition of enterprise software to the healthcare field and development of new software applications that focus on patient safety, assurance of accuracy and safety. Use of PACS - Picture Archiving Computer Systems – will continue to grow as healthcare facilities make digitized images available on a network. Medication management systems also will be one of the key areas for investment, to automate and provide instant audit of the systems.

Healthcare facilities, including more than 5,000 hospitals, will offer many opportunities. However there also is continued consolidation and growth in companies providing the back-end operation to healthcare – billing, payments, and coordination of benefits. Among the goals is that patients will receive approval for specific treatments and payments real-time versus waiting for approval.

"The dollar investment in healthcare IT is growing by about 9% a year for the next couple of years," Dorenfest says. "Many IT professionals are drawn to this industry because of that growth, but also because they feel they can make a contribution to something of a higher good." Dorenfest projects that the IT job openings will be involved in creating, but also modifying and maintaining systems and architectures. "I think the most job growth will be in the extensive implementation of new systems," he adds.

For more information about IT Careers advertising, please call: 800.762.2977

Produced by Carole R. Hedden

SENIOR SOFTWARE ENGINEER to provide on-site consultancy to analyze, design, develop and implement complex enterprise wide applications with domain knowledge of chemical engineering processes using object oriented technologies with Java, J2EE, Coolgen, C++, Interwoven, IBM Visual Age, Rational Rose, UML, SNA Server, PVCS, ERWin, CICS, Oracle, AS400 and UNIX Top Link in Windows and UNIX environments. Require: B.S. in Engineering/Computer Science or closely related field with five years experience in the job offered or any experience providing skills in described duties. 40% travel to client sites within the United States required. Competitive salary and benefits, 40 hours/week, 8 am to 5 pm, M-F. Apply with resume to: President, ObjectNet Technologies, Inc., 1117 Perimeter Center West, Suite E-104, Atlanta, GA 30338.

Manager of Systems Operations Support

Manages desktop support functions at RTP facility. Provides leadership, consulting, analysis, design, programming, maintenance, training, & documentation for sys op support. B.S. or equiv. in Comp. Sci. or related field & 3 yrs operations exp (incl w/: supervising; VMS comp sys & Blaise survey processing sys; installing, maintaining & documenting Video Conferencing Systems; maintaining, upgrading, & documenting use of Brightmail anti-spam technologies; managing printer configuration & acct admin incl Active Directory group policy mgmt; & operation of comp sys & networks in a qualified 21 CFR Part 11 regulated environment). E-mail resume to Jochoa@fhi.org or send resume to, 2224 E. NC Hwy 54, Durham, NC 27713.

IT Co in Fairfield, NJ has multiple openings in various locations nationwide for IT Professionals w/ foll skill sets in Windows/ UNIX:

- J2EE, Web Services, UNIX, Oracle or Sybase (Job Code JJ05)
- Data Warehousing/BI - Informatica, Business objects, Cognos, PL/SQL (Job Code WJ05)
- .net, VB.net, ASP.net, C#, SQL Server (Job Code NJ05)
- DBAs - Oracle or Sybase or SQL Server, Backup, Restore (Job Code DJ05)
- Architects - J2EE or .net (Job Code AJ05)
- QA - Winrunner, Loadrunner, load testing (Job Code QJ05)
- Business or Technical analyst (Job Code BJ05)

Req Bach degree or foreign equiv & 1-3 yrs exp or training in job duties. Will accept any combination of edu, training &/or exp that meets min req'mnts. Must refer to Job Code when applying. Send resume to: Insyst, Inc., 271 Route 46 West, Suite A201, Fairfield, NJ 07004. Fax: 973-808-0237, Email: jobs@insystus.com.

Software Engineer opening in Tampa, FL (40 hrs/week; 8 am - 5 pm; $68,879.28 per yr.). Perform co-existence testing to determine impacts to/from existing systems on the same platform using Ciber and TAP (Industry Standard Record Formats for wireless phones); ensure integrity and performance of systems; problem detection, resolution, and prevention to minimize impacts to clients. Req's BSCS/CE & 1 yr of prof. exp. in job offered or in systems analysis, design/ program coding and testing. Must have prof. exp. with application design and development in C++ and Visual Basic, Unit Testing/ Integration Testing, Ciber and TAP, ASP, HTML, XML, Internet Information Server, ISAPI, and Windows operating system (experience may be gained concurrently). Send resume to Workforce Program Support, POB 10869, Tallahassee, FL 32302-0869. Reference job order# FL2600149. EOE

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Database Administrator: Proactively identifies and resolves potential database problems. Responsible for directing programmers & analysts, testing & correcting errors, & redefining changes to the database. Specifies user access level, calculating optimum values for the database parameters & monitoring database performance, as well as designing & modifying the database in order to increase performance using DB2, SQL Server, & Oracle Database Management Systems. Must have 8 yrs exp of which 6 yrs must be with Database Management Systems; 4 yrs w/DB2 on AIX or Linus; 4 yrs w/Oracle on Windows; and 2 w/Microsoft SQL/ Server. This experience can be gained concurrently. Submit resume to Leslie Smith, 5151 McCrimmon Parkway, Suite 216, Morrisville, NC 27560.

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Citigroup Payco I (d/b/a CitiStreet) have multiple openings for Jr & Sr positions at its office in Quincy, MA: Software Developer & UNIX System Consultant. For Software Developer - work on the on-going design, development & enhancement of our Portal Home Page & Single Sign-on authentication functionality. Min reqs: MS or equvt in CS, CA, Engg or related field + 2 to 4 yrs exp in related Software Engr position w/design & devpt of business application using Java in IT industry. Exp must incld 2 yrs w/analysis, design, develpt & testing software systems using JSP, Servlets, Weblogic application server, EJB & RDBMS; & 1 yr w/ JMS, Oracle database server/technologies, & using Rational Rose to design software model or to develop Object Oriented (OO) models. For UNIX System Consultant - Responsible for our UNIX infrastructure. Min reqs: BS or equvt in CS, Math, Engg or related field + 2 to 5 yrs exp in a related software position devlp system, network & application programming in IT industry. Exp must incld 2 to 5 yrs w/multi-platform UNIX environment comprised of Solaris, AIX, tru64 & HP-UX; & 6 mths w/NFS, NIS, Automounter, DNS, RAID, performance management, security, shell scripting, Solstice Disk Suite & Veritas Netbackup. Send resume to HR - Job #MSHRQM, CitiStreet, One Heritage Drive, North Quincy, MA 02171. No phone calls. EOE.

Seeking qualified applicants for the following positions in Miami, FL: Senior Process Improvement Systems Analyst. Design, develop and maintain databases and web-based reporting systems for operations process improvement functions. Requirements: Bachelor's degree* or equivalent in computer science, MIS or related field plus 5 years of experience in data collection, statistics and data analysis. Experience with either SQL, Oracle or MS Access also required. Must be fluent in oral and written Spanish. 25% international travel required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Anre Garrett, Federal Express Corporation, 701 Waterford Way, Suite 1000, Miami, FL 33126. EOE M/F/D/V.

DISTRIBUTED SYSTEMS ENGINEER to provide on-site consultancy for design, analysis and administration of network operating system software such as Microsoft NT and Novell; provide design, analysis and implementation of distributed systems using Java and J2EE, and maintenance of distributed systems for hardware and software requiring use of SAP connectors, relational database management, distributed systems, Java, J2EE, Oracle and DB2. Require: Master's degree in Computer Science. Must demonstrate ability to perform stated duties upon interview. Coursework must include distributed systems computing, database management and Java programming. 40% travel to client sites within the United States required. Competitive salary and benefits, 40-hours/week. Apply with resume to: Human Resource Manager, 4C Solutions, Inc., 1201 7th Street, East Moline, IL 61244.

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S/W Engineers to analyze, design business appls for SAP R/3, ABAP, Workflow, C, C++, Java, VB, Oracle, SQL, etc. under Windows, UNIX OS; analyze business processes to determine reqs & generate reports; prepare documents, flow charts and programming specs; create appl prototypes for client approval and rapid appl development; train users in business appl usage. Require: MS or foreign equiv. in CS/Engg. (any branch)/Math & 1 yr exp in IT. High salary. F/T position. Travel Required. Resume to HR, Smartsoft International, Inc., 3965 Johns Creek Court, Suwanee, GA 30024.

Test Coordinator & Issue Coordinator. Responsibilities include issues/risks management, and change and control process management of project; test planning and preparation; test coordination; system analysis; and assisting in project plan review and update. Must have Bachelor's in Computer Science, MIS or related, 6 mos. exp. in job offered or Software Tester or related, and knowledge of Clear Quest, software development life cycle, and testing methodologies. Send resume to Praxis Technology Group, Attn: Mark Loomis, 1500 NW 118th St., Des Moines, IA 50325.

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Seeking qualified applicants for the following positions in Collierville, TN: Senior Programmer Analyst. Formulate/define functional requirements and documentation based on accepted user criteria. Requirements: Bachelor's degree* or equivalent in computer science, MIS, applied mathematics, engineering or related field plus 5 years of experience in systems/applications development. Experience with J2EE, CORBA and database development also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Kamlesh Dhaliwal, FedEx Corporate Services, 101 N Sepulveda Blvd., 3rd Floor, El Segundo, CA 90245. EOE M/F/D/V.

Programmer Analyst

Multiple positions available to analyze user requirements, procedures, & problems to automate processing & improve existing computer systems.

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Programmer Analyst w/Bach or Foreign Equiv. in Comp. Scie. or Engg. or Math & 2 yrs exp to analyze & document requirements using MS office tools, design applic. using MS Visio. Design database using Erwin tools. Develop Win & web applic. using ASP, ASP.NET, HTML, XML, C#, Visual Basic, VB.NET, IIS, SQL Server, MS Access, Excel Macro, Power Builder & Sybase. Plan & track project using MS Project Plan (MPP). Mail res: eBusinesscorp Inc. 209 West Central Street, Suite 106, Natick, MA 01760.

Software Engg. w/Masters dgr. 6-m. 1yr. exp. or 3 yrs for equivl. w/Bach. & 5 yrs. exp.to wk. in conj. w/hardware or Prog. Analyst, w/either 3yrs. exp or w/bach. dgr. & 2yrs. exp. using: z/OS, Solaris, DB2, Excel, JCL, TSO/ISPF, SAS, COBOL, PL/SQL, Java, HTML, JSP, Photoshop, Java Script, Unix, PERL, XML, XSL, XSLT, Oracle, SQL Loader, Informatica Power Center/Power Mart, Windows NT, Erwin tools, ReportNet, Cognos, SQL Server, Ab Initio, C,C++, J2EE, WebLogic, Crystal Report, Jboss, Struts, JSTL, Spplets. Send resume to: Global Soft Systems, Inc. 10000 W. 75th Street, Suite 200, Shawnee Mission, KS 66204.

.NET Developer

Gather requirements from business users in order to develop various core business components in VB.NET, C# and .NET. Write test case and test scripts using automatic testing tools. Must have Masters Degree in Computer Science or in a related field & 1 yrs. exp. or 1yrs. exp. in a related position w/ability to use: ADO.Net, .Net technology, C#, VB.Net, SQL Server and OOAD. 40.0 hrs./wk 9:00 AM - 6:00 PM. **Applicants send cover letter and resume to:** Cyber Korp, Inc., 400 West Lake Street, Suite 216, Roselle IL 60172-3572, **Attn: HR MGR.**

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Seeking qualified applicants for the following positions in Memphis, TN: Senior Business Systems Analyst. Develop major applications systems requirements, testing and controls. Requirements: Bachelor's degree or equivalent* in business, computer science, engineering, mathematics, MIS or related field, plus 5 years of experience in systems planning and design or systems development and integration. Experience with: software development using Visual Basic.Net or ASP.Net; database administration using SQL; and STAR scheme data warehousing also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Jay Carlson, Federal Express Corporation, 3680 Hacks Cross Road, Bldg H-2nd Floor, Memphis, TN 38125. EOE M/F/D/V.

Software Engineers, Programmer Analysts, Systems Analysts with NE based IT firm. Will need Bach +1 yr exp for jr level position and Master or Bach + 5 yrs exp for sr level positions. Skills req. C, C++ Java, HTML, MS-Access, SQL, CSS, Perl, MS SQL Server, Oracle 8i, Sybase, DB2, Windows NT, UNIX, VC++, Visual Cafe,CBS, EJB, SOAP, CGI, RMI, Apache Web server, SAP, SAS, People Soft, SIEBEL, iPlanet and Struts. Apply with two copies of resume to H.R. Department, IQ Systems Inc., 11907 Arbor Street, Suite A, Omaha, NE - 68144.

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Seeking qualified applicants for the following positions in Memphis, TN: Senior Systems Programmer. Devise procedures to solve complex systems and applications problems. Requirements: Bachelor's degree or equivalent* in computer science, MIS, mathematics, engineering or related field plus 5 years of experience in systems programming. Experience with development of barcode symbology, sensor technology and scanning technology also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Miley Ainsworth, FedEx Corporate Services, 2847 Business Park Drive, Bldg J, Memphis, TN 38118. EOE M/F/D/V.

Technical Support Specialist. 8a-5p, 40hrs/wk. Analyze project; review, test prgm for compatibility; troubleshoot; provide tech support, update in telecom billing & provisioning using knowl of systms dsgn, networks, computer architecture, graphics, switches, routers, Oracle 9i, C, C++, Java, HTML & OTA. Req: Bach or equiv foreign deg in Comp Sci/Applications/ Engg; Info Technology; Electrical, Electronics or related Engg. Resume: Megasys, Inc., 200 Lazy Shade Ct., Duluth, GA 30097.

Software Engineers needed. Seeking candidates w/ MS or equiv. & rel work exp. Part of the req. rel. exp. must include 1 yr working w/ WebLogic Application Server & EJB. Duties include: Dev. web-based applications; Architect, design, & code to stated specs using detailed cases & J2EE. Travel & relocation may be required. Mail resume & refs to: Customer Care, Inc., 2278 Camino Ramon, San Ramon, CA 94583.

SOFTWARE ENGINEER to provide on-site consultancy to analyze, design, develop and implement complex enterprise wide applications using object oriented technologies with Java, J2EE, C++, WebSphere, ERWin, Oracle, AS400 in UNIX/ Windows environments. Require: B.S. in Electrical/ Electronics Engineering/ Computer Science with five years experience. 40% travel to client sites within the United States required. Competitive salary and benefits, 40 hours/week, 8 am to 5 pm, M-F. Apply with resume to: President, ObjectNet Technologies, Inc., 1117 Perimeter Center West, Suite E-104, Atlanta, GA 30338.

Principal Software Engineer will serve as chief architect for all IT Asset Management development projects. Will participate in project planning, development and management. Will act as technical mentor for junior and senior developers. Will develop and implement re-usable technical standards, processes and functions for the team. Will provide input representing IT Asset Management to all cross-organizational development tasks and vendor development. Will perform design and development to support and enhance process areas surrounding IT Asset Management including hardware data consolidation, software licensing, purchasing, receiving, contract / warranties and reporting. Will oversee Asset database maintenance and reporting including database object design and creation, and SQL tuning. Will architect, design, develop, test, and implement Asset Management website. Will design, develop, implement, and maintain Peregrine Connect.It! scenarios supporting import of hardware and software data gathered from IDD hardware and software scan technology. Will be responsible for Altiris to AssetCenter data import piloting, implementation and desktop application composition for translation and import. Will serve as lead developer and build manager for Peregrine Get.It! implementation. Requires Bachelor of Science or equivalent in Computer Science, Engineering, Math, or Physics and five (5) years in job offered OR five (5) years experience in Oracle database design and development. Candidate must also possess demonstrated expertise in IT asset management using Peregrine tools - AssetCenter and Get.It studio - and Altiris "NS"; demonstrated expertise performing data analysis and mapping using Peregrine Connect.it!; and demonstrated expertise developing web applications using HTML, ASP, IIS administration, and VB/COM. Salary: $77,330/yr, M-F, 9AM-5PM. Send 2 resumes to Case #200300406, Division of Career Services, Labor Certification Unit, 19 Staniford St., 1st fl., Boston, MA 02114. EOE. Applicants must be US workers eligible to accept full-time employment in U.S.

Sr. Software Engineer. Job in Tallahassee, Florida. Multiple position openings. Responsible for development & maintenance of existing code base for multi-tier program environment using C++, Windows-based development environments and SQL based database servers. Duties include analysis of req's, development & preparation of technical documentation. Position requires installation and configuration of record and document management software and troubleshooting defects reported by QA and Support. Req's: Bachelor's degree (or foreign equivalent) in CS, EE or CE or related field plus 2 yrs experience in job offered position or 2 yrs exp in related occupation as a Software Engineer. 40 hr wk. 9am-5 pm, $52,000/yr. Send resume to Agency For Workforce Innovation, P.O. Box 10869, Tallahassee, FL 32302. RE JO FL #259-9978.

Programmer/Analysts Needed. Seeking qual. candidates possessing BS or equiv. and/ or rel. work exp. Part of the req. rel. exp. must include 2yrs working w/ C, C++, & UNIX. Duties include: Plan, dev. & maintain computer prog. Code, test, & debug prog. Work with Oracle, PL/ SQL, C, C++, UNIX, SAP R/ 3 ABAP/4 & SAP BW. Fwd. res. & ref. to Prudent Technologies Inc., 8080 Ward Parkway, Suite 320, Kansas City, MO 64114.

Senior UNIX System Administrator working under supervision of Director of UNIX Administration, will apply knowledge in system administration area with SUN Enterprise Servers, SUN Sparc Storage Array, Disk Sub System, Enterprise Tape Library (ETL), SUN Solaris, TCP/IP, Unix shell scripting, and Perl. Will utilize Apache Web Server, Veritas file system, RAID Manager, and SUN HA Cluster. Will install, configure, and troubleshoot Veritas Cluster Server for high availability in critical production environment. Will utilize and administer Veritas Volume Manager for file system creation, disk mirroring and RAID implementation using command line. Will install and configure performance monitoring tools: HP Open View and Network Node Manager configured for monitoring network equipment. Will configure SNMP agents on SUN servers and NNM to access HP Open View web access. Will create maps/submaps, SNMP event configuration, data collection and thresholds, and Network Polling configuration. Will apply knowledge of BMC patrol agent and Unix/ORACLE. Will install modules for performance/system resource monitoring, and evaluation of SUN servers, OS and applications. Will perform configuration and performance tuning of system resources per client requirement. Will provide 24x7 support, mentor System Administrators, and perform project management. Requires Bachelor of Science or equivalent in Computer Science, Engineering, Mathematics, or Physics and three (3) years in job offered OR three (3) yrs experience in UNIX system administration OR, in the alternative, no degree and five (5) years experience in job offered or five (5) years experience in UNIX administration. Candidate must also possess demonstrated expertise in security analysis using ESM in a UNIX server environment; demonstrated expertise installing, configuring, and troubleshooting of Veritas Cluster Server 3.x for high availability; and demonstrated expertise in D1000, FC4500, IP4700 disk storage installation with HBA cards and LUNs configuration with Navisphere Manager/ NaviCLI. Sal: $75,125/yr, M-F, 9AM-5PM. Send 2 resumes to Case # 200300409, Division of Career Services, Labor Certification Unit, 19 Staniford St., 1st fl., Boston, MA 02114. EOE. Applicants must be US workers eligible to accept full-time employment in U.S.

Seeking qualified applicants for position of Supervisor of Web-based Technology. Bachelor's Degree in Computer Science, Information Technology, or closely related discipline and experience with Web-based salary/benefits systems required. Submit resume to: SLW#2, The Waters Consulting Group, Inc., 2695 Villa Creek Drive, Suite 104, Dallas, TX 75234. EOE M/F/D/V.

Software Engineer - Applications

Develop, test, install, maintain and improve telecommunications software and network systems. Must have Masters Degree in Engineering or in Telecommunications & 6 mos. exp. or 6mos.. exp. in a related position w/ability to use: VoIP Products, Empirix Protocol Test Suites, and Sage Voice Quality Test Suites. 40.0 hrs./wk 9:00 AM - 6:00 PM. **Applicants send cover letter and resume to** Cyber Korp, Inc., 400 West Lake Street, Suite 216, Roselle IL 60172-3572. **Attn: HR MGR.**

SOFTWARE DEVELOPER to develop and maintain applications in processing tax-related data and in creating tax reports for different states; Convert data received from clients and integrate into the developed applications; Define tax rules in great detail and develop application requirements; Analyze and develop logical structures and processes to meet the specifications; Develop the applications and adjust them to meet the dynamic changes of different states; Develop and maintain object-oriented software modules to be used in different parts of the applications efficiently; Analyze and design highly complicated tax applications for extremely decentralized, complex-rules states; Develop web-based sales tax compliance program to help our client to collect sales tax exemption certificate from customers. Require: Master's degree in Computer Information Systems with one year of experience in the job offered or as a Network Support Administrator. Competitive Salary Offered. Send resume to: Vickie DiLuigi, Salis Inc., 300 Colonial Ctr Pkwy, Ste 300, Roswell, GA 30076; Attn. Job BC.

Atlanta, GA. DUTIES: Devel. a proprietary Point of Sale Pre-Paid Card application, programming for other new pre-paid products, internal systems and post development application and systems maintenance utilizing programming tools and languages such as Java, XML, JSP, J2EE, EJB and SQL Server. Design, devel., customize and implement apps. using Java. Perform troubleshooting of system and apps. Java Developer 2 requires: M.S. in Computer Science or closely related field plus 1 yr. exp. in job offered or 1 yrs. exp. as Computer Software Consultant. Exp., which may be concurrent, must incld. 1 yr. exp. w/ JAVA. Java Developer requires: M.S. in Computer Science or closely related field. Qlfd. applics. Mail resume w/ad (no calls) to L. Liban, Interactive Communications International, Inc., 250 Williams Street, Suite M100, Atlanta, GA 30303.

Computer Professionals (Multiple Openings): Software Engineer/ Sys. Analyst/ Programmer Analyst/DBA Must have bachelor degree or equivalent and experience in some of the following: Java, Cobol, JCL, C/C++, VB, ASP, Databases (Sybase / SQL / Oracle / MS Access / DB2), ERP/CRM (Oracle, Peoplesoft, SAP, JD Edwards, BAAN, Siebel, Vantive), Datawarehousing Tools (Cognos/ Informatica/ Business Objects/ Datastage/ Microstrategy), Tools (CMSynergy, Vitria) in Windows (95/98/2000/NT/XP) and/or UNIX and/or Linux operating systems. Must be able to travel or relocate nationwide. Send Resume to: HR Manager, Adaequare, Inc., 10817, Waterbury Ridge Ln., Centerville, OH 45458 Or resumes@adaequare.com. Only email/mailed resumes accepted (No Walk Ins)

Programmer Analysts sought on an ongoing basis, specializing in SAP, Oracle, and other technologies and disciplines, to develop, create, modify and implement computer system, application software and specialized utility programs to meet client needs. Bachelor's degree or foreign or functional equivalent in related field and relevant experience. Excellent benefits and salary commensurate with experience. Send resume to: Recruitment Coordinator, Ref. Code 0202, 4400 Campbells Run Road, Pittsburgh, PA 15205; EEO/AAP/M/F/V/H.

SENIOR PROGRAMMER/ANALYST to analyze, design, develop, test, implement, maintain, administer and support clinical web-based application software using J2EE Technologies, Servlets, EJBs, XML/XSLT, JDBC, iPlanetWeb server, CORBA, LDAP, JNDI, RMI and BEA Weblogicon SUN Solaris and UNIX platforms. Require: Bachelor's degree in Computer Science, an Engineering discipline, ora closely related field with 2 yrs of exp in the job offered or as a Software Engineer. Competitive salary offered. Apply by resume to: Debra Daniel, University of Alabama at Birmingham, GSB 401, 619 19th Street South, Birmingham, AL 35249-6529; Attn: Job KS.

SENIOR PROGRAMMER/ANALYST to analyze, design, develop and implement multi-tier client/server and distributed application software using Object-Oriented programming, UML with Rational Rose, Java, EJB, WebLogicApplication Server, Oracle RDBMS and JSP under Windows XP and SUN Solaris operating systems. Require: B.S. degree in Computer Science/Engineering, or a closely related field with 2 yrs of exp in the job offered or as a Systems Analyst or Software Engineer. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Send resume to: Roz L. Alford, Principal, ASAP Staffing LLC, 3885 Holcomb Bridge Rd., Norcross, GA 30092; Attn: Job KG.

Internet company seeks Ph.D. Research Engineers responsible for innovative research. Interested applicants should send resumes to: K. Wolfe; 1600 Ampitheatre Parkway; Mt. View, CA 94043. Visit www.google.com for additional information.

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Principal Engineer. Req. a Master's deg. in Eng., Math, Statistics or Operations Research and 3 yrs. experience in application of mathematics to business issues. All stated exp. must include optimization, control theory, probability/statistics, economics/business strategy and computer programming & scripting. Perform software engineering, design algorithms & data structures, create prototypes, conduct validation, and create deployment & training plans for interactive marketing. Apply w/ resume to: R. Luenberger, Advertising.com, 888 Villa St., 3rd Floor, Mountain View, CA 94041.

SOFTWARE ENGINEER to design, develop, test, implement and support clinical web-based applications using J2EE technologies including Servlets, EJBs, Java Beans and Applets, XML/XSLT, RMI, CORBA, LDAP, JDBC, Oracle, CSS and JavaScript; Administer BEA Weblogic, JrunJ2EE Servers and IplanetWeb Server on Solaris and Windows platforms. Require: Master's degree in Computer Science or a closely related field with 2 yrs of exp in the job offered. Competitive salary offered. Apply by resume to: Debra Daniel, University of Alabama at Birmingham, GSB 401, 619 19th Street South, Birmingham, AL 35249-6529; Attn: Job UG.

IT Professionals: Paramount Software Solutions, Inc., invites responses from qualified persons to explore career opportunities in Information Technologies & related fields. Qualified applicants must have experience using PeopleSoft 8.4, PeopleCode, PeopleSoft Financials 8.8, Application Designer, SQR, Sun Solaris, Security Administration, PeopleSoft Internet Architecture, SCM Business Process Flow, Component Interfaces & RDBMS, etc. B.S. or equiv. in C/S or Eng'g or Elect. Eng'g reqd. All positions require some degree of travel. Positions available nationwide with the primary focus on Atlanta, GA & vicinity. Please send resumes only to HR, 3350 Riverwood Pkwy., Ste. 1900, Atlanta, GA 30339 (EOE).

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Send resume to: HR, RS Software (I) LTD., 1900 McCarthy Blvd., #103, Milpitas, CA 95035.

SOFTWARE ENGINEER to design, develop, test, implement and support clinical web-based applications using **J2EE technologies** including Servlets, EJBs, Java Beans and Applets, XML/XSLT, RMI, CORBA, LDAP, JDBC, Oracle, CSS and JavaScript; Administer BEA Weblogic, JrunJ2EE Servers and IplanetWeb Server on Solaris and Windows platforms. Require: M.S. degree in Computer Science or a closely related field with 2 yrs of exp in the job offered. Competitive salary offered. Apply by resume to: Debra Daniel, University of Alabama Health Services Foundation, GSB 401, 619 19th Street South, Birmingham, AL 35249-6529; Attn: Job SV.

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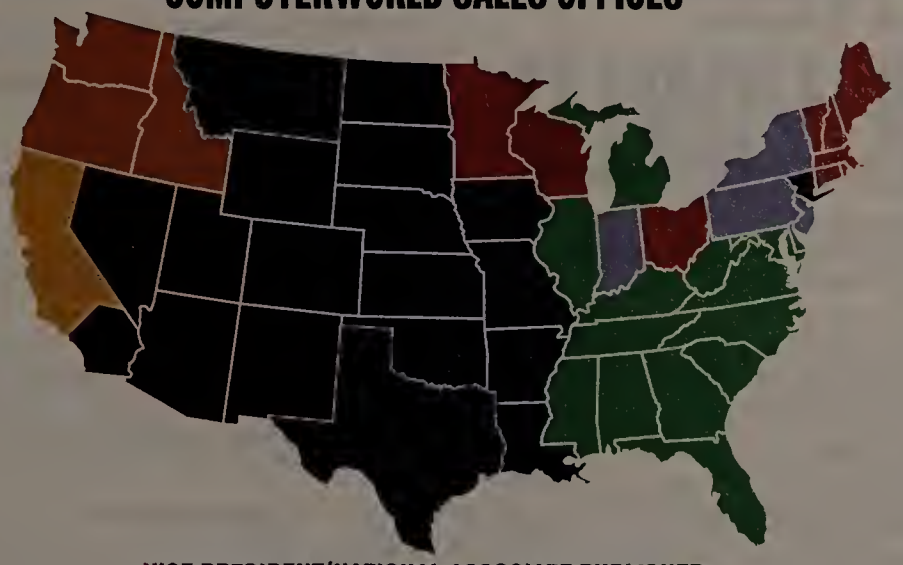

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Linux

thought it was reasonable," said an IT executive at a large financial services institution who asked not to be identified. "We think the vendors' agreements with us are sufficient for addressing intellectual property issues."

About 20% of the firm's distributed servers run Linux, and that figure is expected to grow, the IT executive said. He added that The SCO Group Inc.'s Linux-related lawsuit against IBM caused officials at the financial services firm to pay attention to IP protection and see to it that clauses in contracts with hardware vendors don't hold his company liable. There are also unspecified contingency plans in place should a problem arise.

Joseph Panfil, director of enterprise technology at Chicago Mercantile Exchange Holdings Inc. (CME), said he and two colleagues spent about two weeks in late 2003 doing a risks-vs.-rewards analysis of Red Hat Inc.'s Linux distribution on Intel-based hardware. The group studied the IP protection plans of each vendor that the CME was considering and sought out the opinions of the exchange's attorneys, he noted.

The CME currently runs Linux on about 700 servers from Hewlett-Packard Co. Panfil said that if push comes to shove, the exchange figures it can switch to Sun Microsystems Inc.'s Solaris operating system, because the CME's Java-based applications can run on either Linux or Solaris, which it continues to use on 700 servers. He added that he's even more comfortable with the Linux decision now that an open-source version of Solaris 10 is becoming available.

And even if the CME had to pay license and legal fees because of an IP challenge, exchange officials think the cost would be offset by the savings it has accumulated by using Linux-based commodity servers. Panfil said the CME estimates that it saved $2.8 million last year by using Linux systems for its server expansion instead of Solaris machines.

'It Bleeds You Dry'

But Rick Smith, a network manager at Brown University, said he attended a free seminar in December that featured presentations by an analyst from The Yankee Group and three attorneys who specialize in intellectual property law. "They said, 'This is the worst thing you want to get into. It bleeds you dry,' " he noted.

Smith said that IP protection is a big factor in his decision-making process on IT purchases and that he was impressed with Microsoft's indemnification policy. "You don't want to go down a road gambling," he said. "At the end of the day, the simple question is, Can we get the same results out of [Microsoft's] platform without the potential hazards? It's a no-brainer."

Microsoft has made its IP protection policy a key component of the "Get the Facts" marketing campaign it designed to try to temper users' enthusiasm for Linux. Last week, Microsoft pointed to two new analyst reports confirming the issue's importance for users and to contracts from two customers, both of which cited IP protection as a critical factor that influenced their decisions to use Microsoft's software.

Stephen Graham, an analyst at IDC in Framingham, Mass., said the importance of IP protection can vary based on the situation. Companies need to do a rational assessment of the risk, determine their tolerance for it and then make sure vendors' offerings are within the parameters they set, he said.

"Forget Linux, forget SCO," Graham said. "It's something that IT professionals just need to think about." **52567**

LINUX ADDITIONS

HP, IBM, Novell and Red Hat plan to announce products at LinuxWorld this week:

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Spyware

sion, chief security officer at Radianz, a New York-based provider of telecommunications services to financial services companies. "I see it as a much bigger threat to productivity and privacy [than worms and viruses are]."

In a report to be released this week, Forrester Research Inc. predicts that 65% of companies will either purchase or upgrade antispyware software this year, making it the most popular security technology of 2005. The report is based on a survey of 200 security managers.

Market research firm IDC, meanwhile, predicted that the antispyware business will grow from $12 million in 2003 to $305 million in 2008.

"Spyware has risen to fourth on the list of threats that security managers are most concerned about," trumping issues like spam and identity theft, said David Friedlander, the author of the Forrester report.

The term *spyware* refers to programs that quietly gather information about a person's browsing habits, and sometimes confidential data, and relay it to advertisers and other parties. Many spyware programs, such as "adware" applications, are used by legitimate companies, but many illegal ones are used to log keystrokes, steal confidential information and redirect browsers.

COALITION DISBANDS

An antispyware group formed by security software vendors is breaking up:

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Daunting Numbers

The sheer number of spyware programs finding their way onto corporate desktops is a major cause for concern, say users and analysts.

Tim Powers, a senior network engineer at Southwire Co. in Carrollton, Ga., estimated that 70% of the electric cable maker's 1,600 systems are infected with spyware.

The majority of the problems caused by spyware have been performance-related, involving PC slowdowns, freezes and crashes, he said. But the potential for data loss from such programs is a real threat, he said. "Spyware is the biggest threat we have today, and it causes more problems with the operation of a PC than viruses do," said Powers.

Spyware programs can be so difficult to dispose of that the only option is to "reimage the system," said Robert Olson, a systems administrator at Uline Inc., a Waukegan, Ill.-based distributor of packing and shipping materials.

"We were spending hours trying to diagnose and solve the problem and would usually end up just rebuilding the system," said Olson, who recently installed antispyware software from Webroot Software Inc. in Boulder, Colo.

The National Center for Missing & Exploited Children installed an antispyware tool from Computer Associates International Inc. in November. Before it began using the software, the Alexandria, Va.-based organization's help desk staff was spending nearly half its time cleaning infected systems belonging to employees in the center's 40-person Endangered Child Unit, said IT operations manager Steve Gelfound. "We are a company of 300 users, and we just couldn't have 40 users taking up all of our time," he said.

Vendors such as CA and Webroot, which recently raised $108 million in venture funding, have been shipping enterprise-ready antispyware products for a few months.

Still, most antispyware products are aimed at the consumer market and offer little of the centralized administration and support capabilities needed for enterprise use.

But this week several vendors plan to unveil products to help companies block, detect and weed out spyware. The companies making announcements at the RSA conference include Symantec Corp. and smaller vendors such as SecureWave Inc. and InterMute Inc. **52557**

NEW PRODUCTS

A look at some of the antispyware products coming out at RSA:

CounterSpy Enterprise (Sunbelt Software Distribution Inc.)
- Real-time spyware detection on the desktop.

ipAngel X3V (Lucid Security Inc.)
- Intrusion-prevention appliance that can stop spyware from being downloaded via Web browsers or e-mail clients.

Sanctuary Application Control suite (SecureWave Inc.)
- Antispyware functions available in an endpoint security bundle.

SpySubtract Enterprise Edition (InterMute Inc.)
- Web-based and centrally managed antispyware suite.

Symantec AntiVirus Corporate Edition 10.0 (Symantec Corp.)
- Tools for detecting, blocking and removing spyware are bundled with antivirus software.

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FRANK HAYES ■ FRANKLY SPEAKING

HP: Reinvent

BY THE TIME YOU READ THIS, Carly Fiorina's bones will have been picked clean by reporters, pundits and the usual gang of analysts. They'll have told you how wrong Fiorina was with the Compaq merger (duh!), how Hewlett-Packard now needs to break itself up, how the short list of CEO candidates should include IT execs, but really HP must hire a non-IT guy and re-create the magic that was Lou Gerstner's IBM.

Me? I'm just glad Fiorina's gone. She was a font of bad ideas: Compaq, some very public board battles, the demolition of "the HP way." But give Fiorina her due: She wasn't afraid to make bets.

And if they had paid off, we'd all be saying how right she was.

Fiorina was hired to shake HP out of its long-time lethargy. The only way to do that was to take chances. Fiorina did. Unfortunately for her — and for HP — she wasn't able to reinvent HP as IBM (services giant) or Dell (PC leader) or Apple (consumer products whiz). If the economy had improved faster, the PC angle might have worked. But she ran out of time.

What now? HP's board says there'll be no change in strategy and the company is looking for a hands-on CEO. Translation: No breakup. But you can't rely on what the board says. Of *course* HP won't make changes — not before hiring a new CEO. That CEO will be the one who decides HP's strategy going forward: to spin things off, build itself up or place its bets some other way.

That strategy can't be based on the conventional wisdom we're all hearing — at least not if it's going to do HP any good. HP doesn't need clichés, fads or a plan to turn itself into IBM circa 1993. HP needs a strategy based on what the market needs and what HP can deliver.

Remember the market? That's you. Customers. The people who will ultimately decide whether HP succeeds or fails, no matter what direction it takes. And the people who will get the biggest benefits — if you end up with products and services that do what you need at a price you like.

You have a stake in this even if you're not an HP customer and never become one. Consider: Will your negotiating leverage be improved if there's one less big competitor to play off the others? Nope. Keeping HP in the game is good business.

So, what should you do? First things first: A vendor is in trouble; it's time to push for better deals. And do it now — once a new HP CEO is in place, there'll be a lot less uncertainty, and neither HP nor its competitors will be as anxious to deal. Pushing a troubled HP is how to get your short-term benefit.

Want a longer-term advantage? Tell HP what you need.

Not which HP products you like best. Or what strategy you'd like to see from HP. But what you actually need — whether you think HP can provide it or not.

HP must make some new bets. And it's a company known for engineering, not market genius. So HP's best hope of success — perhaps its only hope for survival — is to remake itself in terms of what customers tell HP they need.

Outsourcing? Grids? Wearable PCs? Consulting? Supercomputing? Zero downtime? Lights-out operation? What do you need that you can't get today at any price? What do you want that you'd buy if the price was just a little lower or the product or service was just a little closer to your requirements?

Those are your needs. The market's needs. Fat, happy vendors aren't meeting those needs, because they don't have to. But a big, worried company in transition — that's someone primed to listen. Its future depends on those unmet customer needs.

And no big IT vendor will ever be more worried than HP is now. Or with better reason.

So tell HP what you need. Don't miss this chance — it won't last long. Because if HP can't reinvent itself soon, the next set of bones getting picked clean won't belong to one CEO. They'll belong to a whole company. **52522**

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

SHARK TANK

It's the Little Things . . .

This new customer-support application truly is slow – instead of seconds, response time is in tens of minutes. But the last straw for this manager comes when one user's PC won't respond except with "Login is incorrect." "I walked over and found she was correct," says IT pilot fish. "The screen was flashing 'Login is incorrect' just as fast as it could. The manager was still going off at me when I reached down and removed the phone headset sitting on the Enter key on the keyboard. She never called for support again."

Reboot, Redefined

My PC is frozen, and rebooting doesn't help, user tells help desk pilot fish. But when fish checks the logs, they show user's PC hasn't been rebooted in more than three weeks. A quick trip to deskside later, fish asks user to reboot again. "She was rather indignant about the whole thing," says fish. "She reached up, turned off the monitor, counted to 15, turned the monitor back on and said, 'See? You watched me reboot it again, and it's *still* the same.' "

Not for Logging In, It Doesn't

New user can't log in, and support pilot fish can't understand why. "We made sure spelling and upper/lowercase was correct, but he was still unable to log in," fish says. "Maybe it was his workstation. I went over to it and typed, and logged in the first time. So I got him to do it again for me and noticed that he pressed the space bar twice between his first and last name. Why did you do that? I asked. He said, 'It makes it easier to read.' "

At Least She Asked

Receptionist knocks on the door of pilot fish who serves as one-man IT staff for this church. "She asked me if she could unplug that big box in the phone room to plug in the portable laminator," fish sighs. "That 'big box' was the server. I since have labeled the outlet with *Do not unplug!* And thank God I had a UPS."

Just Drop It

Pilot fish's team is upgrading PCs for a government agency, pulling all the hard drives and copying the new standard software image onto them. "This process runs smoothly for the first 50 drives," says fish. "But Drive 51 jumps out of my hand and drops down the carpeted stairwell, hitting each of the 15 steps end over end." There's no visible damage, and the drive boots fine, so everyone decides to pretend nothing happened. "Four months later, the drive is dropping sectors like a sieve," fish admits. "We replaced it and told the perplexed user it must be a manufacturer defect."

C'MON, TELL THE TRUTH. Send me your true tale of IT life at **sharky@computerworld.com**. You'll score a sharp Shark shirt if I use it. And check out the daily feed, browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky**.

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